Prepared for:

DRAFT
Programmatic Environmental Impact Statement
Appendices A-L

Hawaiian Monk Seal Recovery Actions

August 2011

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Appendix A
Agency Correspondence

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Initial Agency Letters to USFWS and State of Hawai'i DLNR Inviting Them to Cooperate

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U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
1601 Kapiolani Blvd., Suite 1110
Honolulu, Hawaii 96814-4700
(808) 944-2200 • Fax (808) 973-2941

SEP 14 2010

Loyal Mehrhoff, Ph.D.
Field Supervisor
Pacific Islands Ecological Field Service Office
Fish and Wildlife Service
300 Ala Moana Blvd., Room 3-122
Honolulu, HI 96850-0056

Dear Dr. Mehroff:

The National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) is planning to prepare a Programmatic Environmental Impact Statement (PEIS) regarding implementation of various research and enhancement activities designed to improve survival of Hawaiian monk seals (HMS) in the Northwestern Hawaiian Islands (NWHI). As you are aware, the NMFS Pacific Islands Regional Office (PIRO) and NMFS Pacific Islands Fisheries Science Center (PIFSC) are responsible for HMS recovery and research 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.).

The PEIS, in compliance with the National Environmental Policy Act (NEPA) (40 CFR Parts 1500-1508), will evaluate potential environmental, social, and economic impacts of implementing a range of research and enhancement activities stipulated in the HMS Recovery Plan (2007) to address low juvenile seal survival in the NWHI. As you know, low survival to reproductive age in the NWHI has been identified as a main factor driving the current steep HMS population decline.

Given the jurisdiction of USFWS within the proposed project area (the NWHI) and your agency's technical expertise regarding much of the subject matter to be covered in the PEIS, we are inviting your agency to participate as a cooperating agency on the proposed action pursuant to the Council on Environmental Quality's Regulations for Implementing NEPA (40 CFR 1501.6).

Should USFWS decide to work with NMFS as a cooprating agency, we suggest that we meet to discuss developing an MOU to deliniate our respective roles and responsibilities. Should you decide not to serve as a cooperating agency, please know that we will include USFWS in all of the public information gathering processes undetaken during the PEIS preparation. Regardless of your decision regarding this invitation, we look forward to continuing our coordination with USFWS on HMS recovery and research activities in the NWHI as co-trustees of the Papahanaumokuakea Marine National Monument.

We would appreciate being notified of your decision regarding this invitation on or before October 8, 2010. If you have any questions or would like to meet to discuss this request, please contact Jeff Walters, our Hawaiian monk seal recovery coordinator, at (808) 944-2235, or via email at jeff.walters@noaa.gov.

Sincerely,

Michael D. Tosatto
Acting Regional Administrator

cc: Barry Stieglitz, USFWS, Hawaiian and Pacific Islands NWR Complex

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
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1601 Kapiolani Blvd., Suite 1110
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SEP 14 2010

Barry Stieglitz
Project leader
Hawaiian and Pacific Islands National Wildlife Refuge Complex
Fish and Wildlife Service
300 Ala Moana Blvd., Room 5-231
Honolulu, HI 96850-0056

Dear Mr. Stieglitz:

The National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) is planning to prepare a Programmatic Environmental Impact Statement (PEIS) regarding implementation of various research and enhancement activities designed to improve survival of Hawaiian monk seals (HMS) in the Northwestern Hawaiian Islands (NWHI). As you are aware, the NMFS Pacific Islands Regional Office (PIRO) and NMFS Pacific Islands Fisheries Science Center (PIFSC) are responsible for HMS recovery and research 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.).

The PEIS, in compliance with the National Environmental Policy Act (NEPA) (40 CFR Parts 1500-1508), will evaluate potential environmental, social, and economic impacts of implementing a range of research and enhancement activities stipulated in the HMS Recovery Plan (2007) to address low juvenile seal survival in the NWHI. As you know, low survival to reproductive age in the NWHI has been identified as a main factor driving the current steep HMS population decline.

Given the jurisdiction of USFWS within the proposed project area (the NWHI) and your agency's technical expertise regarding much of the subject matter to be covered in the PEIS, we are inviting your agency to participate as a cooperating agency on the proposed action pursuant to the Council on Environmental Quality's Regulations for Implementing NEPA (40 CFR 1501.6).

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We would appreciate being notified of your decision regarding this invitation on or before October 8, 2010. If you have any questions or would like to meet to discuss this request, please contact Jeff Walters, our Hawaiian monk seal recovery coordinator, at (808) 944-2235, or via email at jeff.walters@noaa.gov.

Sincerely,

Michael D. Tosatto
Acting Regional Administrator

cc: Loyal Mehrfoff, USFWS, Pacific Islands Ecological Services

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
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1601 Kapiolani Blvd., Suite 1110
Honolulu, Hawaii 96814-4700
(808) 944-2200 • Fax (808) 973-2941

SEP 14 2010

Ms. Laura H. Thielen
Chairperson
Department of Land and Natural Resources
1151 Punchbowl St.
Honolulu, HI 96813

Dear Ms. Thielen:

The National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) is planning to prepare a Programmatic Environmental Impact Statement (PEIS) regarding implementation of various research and enhancement activities designed to improve survival of Hawaiian monk seals (HMS) in the Northwestern Hawaiian Islands (NWHI). As you are aware, the NMFS Pacific Islands Regional Office (PIRO) and NMFS Pacific Islands Fisheries Science Center (PIFSC) are responsible for HMS recovery and research 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.).

The PEIS, in compliance with the National Environmental Policy Act (NEPA) (40 CFR Parts 1500-1508), will evaluate potential environmental, social, and economic impacts of implementing a range of research and enhancement activities stipulated in the HMS Recovery Plan (2007) to address low juvenile seal survival in the NWHI. As you know, low survival to reproductive age in the NWHI has been identified as a main factor driving the current steep HMS population decline.

Given the jurisdiction of DLNR within the proposed project area (the NWHI) and your agency's technical expertise regarding much of the subject matter to be covered in the PEIS, we are inviting your agency to participate as a cooperating agency on the proposed action pursuant to the Council on Environmental Quality's Regulations for Implementing NEPA (40 CFR 1501.6).

Should DLNR decide to work with NMFS as a cooprating agency, we suggest that we meet to discuss developing an MOU to deliniate our respective roles and responsibilities. Should you decide not to serve as a cooperating agency, please know that we will include DLNR in all of the public information gathering processes undetaken during the PEIS preparation. Regardless of your decision regarding this invitation, we look forward to continuing our coordination with DLNR on HMS recovery and research activities in the NWHI as co-trustees of the Papahanaumokuakea Marine National Monument.

We would appreciate being notified of your decision regarding this invitation on or before October 8, 2010. If you have any questions or would like to meet to discuss this request, please contact Jeff Walters, our Hawaiian monk seal recovery coordinator, at (808) 944-2235, or via email at jeff.walters@noaa.gov.

Sincerely,

Michael D. Tosatto
Acting Regional Administrator

Response by USFWS

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Hawaiian and Pacific Islands National Wildlife Refuge Complex
300 Ala Moana Boulevard, Room 5-231
Box 50167
Honolulu, Hawaii 96850

TAKE PRIDE IN AMERICA

October 5, 2010

Michael D. Tosatto
Acting Regional Administrator
Pacific Islands Regional Office
National Marine Fisheries Service
1601 Kapiolani Blvd., Suite 1110
Honolulu, Hawaii 96814-4700

Dear Mr. Tosatto:

Thank you for your letter dated September 14, 2010, regarding an invitation to participate as a cooperating agency on the preparation of the Programmatic Environmental Impact Statement (PEIS) to improve the survivability of the Hawaiian monk seal (HMS). The Hawaiian and Pacific Islands National Wildlife Refuge Complex recognizes the importance of this National Environmental Policy Act (NEPA) action to evaluate potential environmental, social, and economic impacts of implementing a range of research and enhancement activities identified in the HMS Recovery Plan (2007) to address low juvenile seal survival in the Northwestern Hawaiian Islands. On behalf of the Fish and Wildlife Service (FWS), we accept your invitation to participate in the preparation of this PEIS as a cooperating agency in accordance with NEPA regulations and procedures.

Based on FWS legally mandated management responsibilities and technical expertise associated with protecting, conserving, and, where appropriate, restoring fish, wildlife and plants and their habitats within the Hawaiian Islands and Midway Atoll National Wildlife Refuges, we look forward to working together with you on this PEIS. We also support your suggestion to develop a Memorandum of Understanding to delineate our respective roles and responsibilities.

I would also like to take this opportunity to introduce you to Mr. Thomas R. Edgerton, who will be arriving in Honolulu on November 8, 2010, to fill the currently vacant FWS Superintendent position for the Papahānaumokuākea Marine National Monument. Tom will be your point of contact for this cooperative effort and will also be replacing Ms. Susan White as the Fish and Wildlife Service member of the Hawaiian Monk Seal Recovery Team.

If you have additional questions or need assistance prior to Tom's arrival, please contact Ray Born, our Acting Superintendent, at 808.742.9488 or via email at Ray_Born@fws.gov.

Sincerely,

Barry W. Stieglitz
Project Leader

Cc: Loyal Mehrhoff, USFWS, Pacific Islands Ecological Services

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
1601 Kapiolani Blvd., Suite 1110
Honolulu, Hawaii 96814-4700
(808) 944-2200 • Fax (808) 973-2941

SEP 14 2010

Barry Stieglitz
Project leader
Hawaiian and Pacific Islands National Wildlife Refuge Complex
Fish and Wildlife Service
300 Ala Moana Blvd., Room 5-231

Dear Mr. Stieglitz:

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The PEIS, in compliance with the National Environmental Policy Act (NEPA) (40 CFR Parts 1500-1508), will evaluate potential environmental, social, and economic impacts of implementing a range of research and enhancement activities stipulated in the HMS Recovery Plan (2007) to address low juvenile seal survival in the NWHI. As you know, low survival to reproductive age in the NWHI has been identified as a main factor driving the current steep HMS population decline.

Given the jurisdiction of USFWS within the proposed project area (the NWHI) and your agency's technical expertise regarding much of the subject matter to be covered in the PEIS, we are inviting your agency to participate as a cooperating agency on the proposed action pursuant to the Council on Environmental Quality's Regulations for Implementing NEPA (40 CFR 1501.6).

Should USFWS decide to work with NMFS as a cooprating agency, we suggest that we meet to discuss developing an MOU to deliniate our respective roles and responsibilities. Should you decide not to serve as a cooperating agency, please know that we will include USFWS in all of the public information gathering processes undetaken during the PEIS preparation. Regardless of your decision regarding this invitation, we look forward to continuing our coordination with USFWS on HMS recovery and research activities in the NWHI as co-trustees of the Papahanaumokuakea Marine National Monument.

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Response by State of Hawai'i
DLNR

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NEIL ABERCROMBIE
GOVERNOR OF HAWAII

WILLIAM J. AILA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

GUY H. KAULUKUKUI
FIRST DEPUTY

WILLIAM M. TAM
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 19, 2011

Mr. Michael D. Tosatto
Regional Administrator
Pacific Islands Regional Office
National Marine Fisheries Service
1601 Kapiolani Blvd., Suite 1110
Honolulu, Hawaii 96814-4700

Dear Mr. Tosatto:

Thank you for your letter dated March 8, 2011, inviting the Department of Land & Natural Resources to participate in preparing the Programmatic Environmental Impact Statement (PEIS) for Hawaii monk seal recovery actions. We regret that we must decline your invitation to participate as a state cooperating agency in preparation of the PEIS. Our decision is based on severe staffing and budgetary constraints that our Department is presently facing. Unfortunately, we foresee further reduction in our workforce, considering the state of our State budget.

We will continue to be in close coordination with your staff during the development of the PEIS for Hawaiian monk seal recovery.

Sincerely,

WILLIAM J. AILA, JR.
Chairperson

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Appendix B
Scoping Report

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National Marine Fisheries Service
Pacific Islands Regional Office

Scoping Summary Report

Hawaiian Monk Seal Recovery Actions Programmatic EIS

January 2011

ERM – West, Inc.

341 West Tudor Road, Suite 206

Anchorage, Alaska 99503

T: 907.770.1994

F: 907.770.2531

Project No. 0118946

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TABLE OF CONTENTS

ABBREVIATIONS AND ACRONYMS

AWA	Animal Welfare Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DOC	Department of Commerce
EO	Executive Order
ERM	ERM-West, Inc.
ESA	Endangered Species Act
FR	Federal Register
HMS	Hawaiian monk seals
MHI	Main Hawaiian Islands
MMHSRP	Marine Mammal Health and Stranding Response Program
MMPA	Marine Mammal Protection Act
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NWHI	Northwestern Hawaiian Islands
PEIS	programmatic environmental impact statement
PSAs	public service announcements
ROD	Record of Decision
U.S.	United States
UME	unusual mortality event
USC	U.S. Code

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1.0 INTRODUCTION

The National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) is responsible for management, conservation, and protection of Hawaiian monk seals (*Monachus schauinslandi*), 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*.). The NMFS Pacific Islands Regional Office (PIRO) and NMFS Pacific Islands Fisheries Science Center (PIFSC) are responsible for implementation of the Hawaiian Monk Seal Recovery Plan (NMFS 2007). NMFS currently has one permit authorizing research and enhancement on Hawaiian monk seals (ESA-MMPA Permit No. 10137-05) issued to PIFSC that will expire in 2014.

NMFS is preparing a programmatic environmental impact statement (PEIS) to assess the impacts of implementing specific management actions and administering a research and enhancement program to improve survival of monk seals. These actions constitute a major federal action subject to compliance with the National Environmental Policy Act (NEPA) of 1969 (40 Code of Federal Regulations [CFR] Parts 1500 - 1508). The NEPA process is described in more detail in Section 3.0 of this report.

The first step in the NEPA process is scoping (as required under 40 CFR 1501.7), which provides an opportunity for the public and agencies to express their views and help identify issues to be addressed in the PEIS, including potential management actions and associated research and enhancement program activities that may be performed on Hawaiian monk seals in an effort to recover the species.

This document represents a public record and summary of the scoping activities. This scoping report summarizes the substantive comments that were received during the scoping comment period. Responses are not provided to individual comments at this stage in the development of the PEIS. Instead they are collected, read, and summarized in this report. Comments will be addressed throughout the Draft PEIS in appropriate sections, and have been considered when developing alternatives for the proposed action.

The next opportunity for the public to comment on the PEIS will be after issuance of the Draft PEIS. Comments received during the Draft PEIS comment period will be responded to and a Comment Analysis Report will be published on the project website. For additional information on future steps in the PEIS process, please see Section 3.0.

1.1 STATUS OF HAWAIIAN MONK SEALS

In the Northwestern Hawaiian Islands (NWHI), young seals are starving, pups are being killed by sharks, seals are getting entangled in marine debris, and sea level rise threatens terrestrial habitats. Low juvenile survival over the past 2 decades is the primary cause of the population's decline. The population decline will likely continue without intervention. Enhancement activities are being considered to improve juvenile survival and the overall health of the population.

In the Main Hawaiian Islands (MHI), incidents such as disturbance of seals on beaches, hooking and entanglement in fishing gear, and intentional killings (*e.g.*, shootings) counteract recovery efforts. Effective public outreach, education, and other actions to protect seals from harmful situations and reduce negative human/seal interactions are essential to minimize impacts in the MHI.

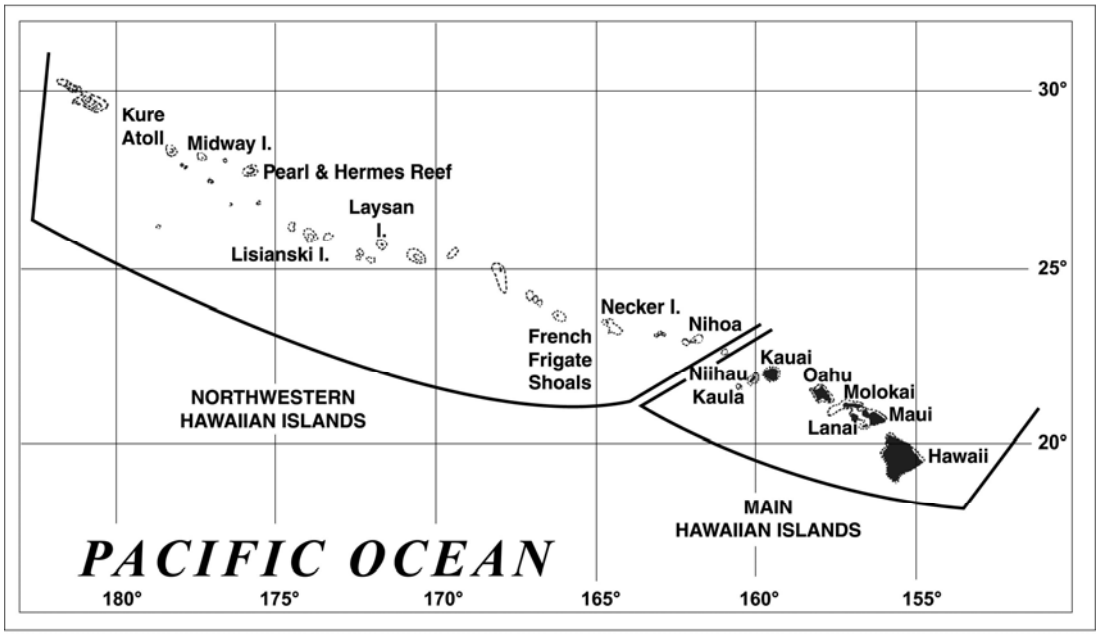
1.2 PROJECT AREA

The project area for this PEIS encompasses the range where Hawaiian monk seals are found throughout the Hawaiian Archipelago and Johnston Atoll including the NWHI and MHI. The majority of monk seals live in six main breeding sub-populations in the NWHI including:

- Kure Atoll;
- Midway Islands;
- Pearl and Hermes Reef;
- Lisianski Island;
- Laysan Island; and
- French Frigate Shoals.

Smaller breeding sub-populations also occur on Necker Island and Nihoa Island, and monk seals have been observed at Gardner Pinnacles and Maro Reef. Most of the population is within the Papahānaumokuākea Marine National Monument, designated in 2006. However, monk seals are also found in smaller numbers on the MHI, where births have also occurred. Figure 1-1 illustrates the project area.

Figure 1-1. Project Area



1.3 DESCRIPTION OF THE SCOPING PROCESS

Scoping activities began on October 1, 2010 when the Notice of Intent (NOI) was published in the *Federal Register* (75 FR 60721). On November 12, 2010, the scoping period was extended an additional 15 days via notice in the *Federal Register* until November 30, 2010. Appendix A provides a copy of the NOI and notice of extension.

The aim of the scoping process is to invite potentially affected and interested individuals, agencies, and groups to help:

- Identify concerns about the proposed action;
- Define a range of alternatives;
- Determine and define the scope of issues to be examined;
- Identify other environmental and consultation requirements;
- Identify related environmental documents being prepared; and
- Identify potentially interested parties.

Central to the scoping process is presentation of the proposed action and preliminary alternatives for public comment related to the scope of the PEIS.

Public comment helps further define the scope as well as develop alternatives considered in the impact analysis.

A basic principle of public participation is reporting back to stakeholders about the process in which they take part. In keeping with a transparent process, this scoping report has been posted on the project website (http://www.nmfs.noaa.gov/pr/permits/eis/Hawaiianmonkseal.htm) and those who are included in the project mailing list received an email notification of such posting.

Public comments were received through November 30, 2010 and are summarized in this Scoping Summary Report. Project scoping materials are included as appendices and include:

- Attachment A: Federal Register NOI and Scoping Comment Period Extension;
- Attachment B: Project Mailing List;
- Attachment C: Project Newsletter and Comment Form;
- Attachment D: Public Scoping Meeting Notices;
- Attachment E: Public Scoping Meeting Sign-in Sheets; and
- Attachment F: Agency Scoping Meeting Information (including agency coordination letters and sign-in sheets).

Scoping is carried out through written communications, public meetings, and formal and informal consultation with agency officials, interested individuals, and groups.

Project information was distributed to the public using the following tools:

- Project mailing list (updated throughout the project);
- Project newsletter and comment form;
- Project website (updated throughout the project);
- Publication of public scoping meeting notices;
- Public service announcements;
- Five public scoping meetings; and
- Agency consultation and coordination.

Mailing List

The mailing list catalogues potentially affected or interested parties, agencies, and elected officials; and in part demonstrates NMFS' outreach efforts for this PEIS. The mailing list is continually updated as new requests are made throughout the project. Updates for the mailing list may come from comment forms, public meeting sign-in sheets, emails, and one-on-one discussions. The initial mailing list included over 345 records. The mailing list is included in Attachment B.

Newsletter and Comment Form

A project newsletter and comment form was distributed on October 1, 2010 via email and postal service to the mailing list and posted on the project website. The newsletter and comment form was also distributed during the scoping meetings. This newsletter was the first in a series of four, and provided project background and historic information, schedule, contacts, and announced scoping meetings, agenda, times, and locations. The first project newsletter and comment form is included in Attachment C.

Project Website

NMFS has established a project website that is available to anyone with Internet access at http://www.nmfs.noaa.gov/pr/permits/eis/Hawaiianmonkseal.htm. The information is updated as project milestones are met and new information is available. The website hosts background information about monk seals, public participation opportunities, newsletters, a public comment form, contact information, and project documents such as the Scoping Summary Report and when available, the Draft PEIS, Final PEIS, and Record of Decision.

Public Scoping Meeting Notices

Public notices for scoping meetings were announced in the following newspapers for each county:

Table 1-1.Newspapers and Dates of the Public Scoping Notices

Newspaper	County(ies) / Islands Represented	Dates of Publication
Honolulu Star Advertiser	Honolulu	October 6 & 13, 2010 November 12 & 19, 2010
MidWeek	Honolulu	October 13, 2010 November 12 & 19, 2010
Hawai'i Tribune Herald	Hawai'i	October 7 & 14, 2010 November 12 & 19, 2010
Garden Island	Kaua'i	October 13 & 20, 2010 November 12 & 19, 2010
MidWeek Kaua'i	Kaua'i	October 13 & 20, 2010 November 12 & 19, 2010
Maui News	Maui	October 11 & 18, 2010 November 12 & 19, 2010
Moloka'i Dispatch	Moloka'i	October 13 & 20, 2010 November 12 & 19, 2010

Public notices for all five public scoping meetings outlined the general purpose of the scoping meeting, meeting times and locations, and the agenda of the meeting. Public notices were published 14 days in advance of each public scoping meeting and again 7 days prior to the meeting date.

Public notices were also published announcing the extension of the scoping comment period 14 and 7 days prior to the deadline for comments. Notarized affidavits of publication were obtained for each legal public notice for the administrative record and are included in Attachment D.

Public Service Announcements

Public service announcements (PSAs) were faxed and/or emailed to the following:

- ABC Hawai'i
- CBS Hawai'i
- Fox News Hawai'i
- PBS Hawai'i
- Hawai'i Public Radio
- Hawai'i Talk Radio
- Hilo KNWB 97.1

The content of the PSAs were identical to the public notices.

Public Scoping Meetings

Public scoping meetings were held in five locations throughout the state of Hawai'i. Table 1-1 shows the dates and locations of the public scoping meetings.

Table 1-2. Dates and Locations of the Public Scoping Meetings

Location	Date
Central Union Church Honolulu, O'ahu	Wednesday October 20, 2010
Mokupāpapa Discovery Center Hilo, Hawai'i	Thursday October 21, 2010
NOAA Sanctuaries Learning Center Kahului, Maui	Monday October 25, 2010
Hale Mahaolu Home Pumehana Kaunakakai, Moloka'i	Tuesday October 26, 2010
Wilcox Elementary School Līhu'e, Kaua'i	Wednesday October 27, 2010

The scoping meetings lasted 3 hours and began with a 30-minute open house. Display boards were situated throughout the room that communicated preliminary project information. During the open house, individuals could circulate in and out of the meeting place, interact with NMFS PIRO, NMFS PIFSC, and consultant team staff, and ask questions.

The open house was followed by a presentation that provided monk seal history and background, information about NMFS and their goals and regulatory requirements pertaining to monk seals, and preliminary project details. A formal verbal comment period was provided after the presentation. Talk story sessions occurred after the formal comment period if time allowed and attendees were interested.

Information packets were provided for each attendee at the public scoping meetings and included a project newsletter, comment form, frequently asked questions on five topics regarding monk seals, a welcome informational brochure, and a table that outlined various ongoing NOAA projects. This information packet and public meeting sign-in sheets are included in Attachment E.

Agency Consultation and Coordination

NMFS invited federal and state agencies with jurisdiction within the project area and/or regulatory responsibility pertinent to monk seals to be cooperating agencies. Letters were mailed September 14, 2010 and requested a response by October 8, 2010.

Letters were also sent to federal and state agencies that might be interested or potentially affected inviting them to an agency scoping meeting that was held in Honolulu, HI on October 20, 2010. Cooperating agency letters and invitations to the agency scoping meeting, as well as the meeting sign-in sheets, are included in Attachment F.

2.0 ISSUE SUMMARY

2.1 SOURCE OF SCOPING COMMENTS

As part of scoping, NMFS PIRO hosted public scoping meetings to introduce the project proposal to the public, describe the process of the PEIS, and solicit input on the issues and alternatives to be evaluated. The scoping comment period ended November 30, 2010.

Scoping comments submitted during preparation of the Hawaiian Monk Seal Recovery Actions PEIS came from the following sources:

- Public scoping meeting verbal comments;
- Agency scoping meeting comments;

- Email and written comments; and
- Verbal comments via the toll-free phone line.

The following table provides the number of comments received in each of these categories.

Table 2-1. Number and Types of Comments Received During the Scoping Period

Comment Type	Quantity
Email / Hard Copy	77
Verbal Comments	48
Phone Comments	2
Agency Comments	12
Total	**139**

2.2 ISSUES IDENTIFIED DURING SCOPING

2.2.1 Native Hawaiian Concerns

2.2.1.1 General

- Statements asserting that monk seals are indigenous (endemic) to only the NWHI and not the MHI.
- Statements asserting that monk seals are indigenous (endemic) to the Hawaiian Islands, and commenters requesting that NMFS provide evidence of this in the PEIS.
- Statements asserting that monk seals are not indigenous (endemic) to the Hawaiian Islands. Some commenters cited specific examples including:
    - *ʻīlioholoikauaua* is not endemic or indigenous to Hawaiʻi because it is not named in the *kumulipo*;
    - monk seals do not have a Hawaiian name given to it by the *kupuna*;
    - an animal this size would have been used by Hawaiians had they occurred here;

- the bones and teeth would have been used in those areas with little to no combustible materials and no evidence exists to support this;
- monk seals would have been used for fuel at least, if not food, and no evidence exists to support this;
- monk seals are not mentioned in any of the chants or depicted in the *hula* performed today;
- monk seals lack any mention of god status like the shark;
- no hooks or weapons are made from the monk seal;
- no known medical use of the monk seal; and
- no *kahuna* use.

- Statements communicating a lack of support from the Native Hawaiian community regarding protection for monk seals.
- The monk seal is a very special animal because it is the only warm tropical seal and only found in the Hawaiian Islands.

Cultural

- Statements asserting that the monk seal is a culturally significant animal as well as a key organism in the Hawaiian ecosystem.
- Statements urging that NMFS address cultural concerns, cultural protocol, monitoring, cultural impact assessment, and plan.
- Statements about protection of aboriginal rights by federal law and objections to invasion of rights by federal government placing restrictions on monk seals. Laws are made to save the fish and endangered species have no cultural base.
- The appropriate cultural practitioners and other Native Hawaiian authorities should be involved with considering the social and cultural importance of seals to Hawaiians within past, present, and future contexts. For example, the Native Hawaiian Historic Preservation Council, Office of Hawaiian Affairs.
- Traditional knowledge needs to be incorporated into resource management planning efforts (specific reference made to Article 12, Section 7 of the Hawai'i State Constitution). NMFS should seek consultation and recommendations from the Aha Kiole Advisory Committee through the Aha Moku Council on these matters of management of the State's natural resources.

- Subsistence users need to have a seat on an advisory council that can represent traditional knowledge to help make sustainable and socially acceptable recommendations for resource management planning.

2.2.2 Fisheries

- Consider the unintended consequences of this proposal to the recreational fishing industry in Hawai`i.
- General comments expressing concern that monk seals will deplete fishery resources.
- Concerns about the impacts of big factory fishing fleets and the potential effects on declining fish stocks thereby causing more shark predation on monk seals.
- Increased monk seal populations will negatively impact our efforts to reach our goals concerning total allowable catches and bag limits.
- Monk seals are stealing fish from fishermen nets and eat the fish targeted by fishermen for supplement.
- Monk seals are the reason why the fisheries are depleted and the fishermen are catching fewer fish.
- Monk seals are depleting the fish stocks in the MHI; it is not accurate that monk seals eat bottom fish.
- Predation by monk seals to deep-7 fishery will destroy what we are trying to save and prevent recovery of our deep-7 near shore reef fisheries.
- Concerns that monk seals are analogous to introduced alien species such as ta'ape that have become invasive and have adverse impacts on fisheries.
- Work with the State of Hawai`i to close the unsustainable gillnet fishery that is killing female monk seals that are of reproductive age and have a good probability to increase the population of this critically endangered species.
- DLNR sets laws on fishermen when and where they can fish for bottom fish.
- The reason monk seals are endangered is due to overfishing in the NWHI. NMFS can solve this problem by installing a Sanctuary Act to stop fishermen from fishing in that area.

- Fishing with gill and similar nets should become illegal.

2.2.3 Alternatives

2.2.3.1 General

- Statements in support of translocation, vaccination, and deworming.
- Statements in support of the No Action alternative.
- Statements in support of ongoing monk seal recovery activities and of expanding the scope of recovery actions to include more direct actions such as deworming, translocation, and vaccinations to increase the monk seal population in the NWHI and MHI.
- Statements in support of the proposed action including translocation, as long as seals are returned to the NWHI.
- Statements in support of Alternative 3 (as presented at scoping meetings); despite concerns over some of the activities, monk seals are no longer in a position for us to choose ideal solutions.
- Immunization, deworming, and translocation could do more harm than good for monk seals.
- At least three cycles of translocation are necessary to determine if that effort will be successful so the proposed ten-year plan will not be very helpful.
- NMFS should specifically evaluate the threat of sea level rise in terms of the monk seal. This should include documenting rates and locations of shoreline loss, analyzing impacts of an increase in the number and severity of storms, evaluating natural and human influenced adaptations seals may use to survive, and evaluating mitigation measures that could improve seal survival in these conditions.
- NMFS needs to evaluate the impacts of past and present military activities in the PEIS.
- Attaching instruments and devices to monk seals poses unacceptable risks to seals. The presence of the device on an animal's back no doubt alters its behavior and poses risks such as snagging on fish nets and rock outcroppings. A study should be done to assess what happens to the instruments.

- The goal of the proposed action should be to stop, not just slow, the decline of seals. Other recovery actions than those proposed should be considered and should parallel the critical habitat designation process.

- The PEIS should evaluate critical habitat designation, seal feeding programs, and other Marine Mammal Commission recommendations as tools for slowing the decline of monk seals. Critical habitat designation will not only ensure there are adequate beach and reef areas, but also help with public engagement. Likewise, feeding young monk seals (done in the 1990s) will have immediate, short-term benefits to prevent decline.

- Consider and communicate the part that monk seals play in overall marine health and balancing the ecosystem.

- NMFS should investigate the effects of all the sunscreen and lotion that tourists leave in the water.

- The impacts of dogs and other animals on seals (including associated canine or feral diseases) should be a top priority for NMFS.

- What happens to other species if we erect huge barricades for the seals?

- There need to be other alternatives and contingency plans that respond to changes in the environment. The government is failing at this. Even after designating the Papahānaumokuākea National Monument, the monk seals are still failing and starving.

- Statements asserting that the NWHI is sovereign state land and has been taken away from its citizens to be "managed" by NOAA. Concerns that NMFS is failing to save monk seals despite millions of tax dollars being spent for nothing in return.

- Federal and State support, including law enforcement, is paramount for any of this recovery to be fully successful.

- A Hawaiian practitioner should be present while research activities are being done.

- Model research on lessons learned from other warm water seal extinctions.

- NMFS should build a nursery or aquarium where juveniles can mature. A sanctuary in the NWHI should be developed where monk seals can learn to forage for themselves and not have human distractions.

- NMFS should deal with the monk seal crisis within the NWHI only.

- NMFS should consider hunting sharks in the NWHI.
- Data collection should be as non-intrusive as possible. Techniques such as bleach marks and instruments are unnecessary and causing harm.
- Reactivate the Midway facilities, or some place that is already there, as research facilities for breeding, rearing, and feeding monk seals to improve their survival.
- Biannual counts of seals are not necessary because a spot check does not really provide useful information.
- Data that NOAA should consider/incorporate into the research and enhancement programs for monk seals includes information on:
    - diseases, infections and infection rates;
    - genetic diversity;
    - male mobbing;
    - anthropogenic disturbances;
    - monk seal biology and behavior; and
    - literature and data sources.

2.2.3.2 *Translocations*

- Statements that do not support translocating monk seals to the MHI.
- Statements in support of translocating monk seals to improve survival against predation and starvation in the NWHI. NMFS should include in their translocation plans, steps to discourage human interaction with seals moved from the wild. Comments stating that translocation should start immediately.
- Statements in support of moving injured or malnourished seals to the health care facility being built in Keahole, Kona.
- Statements asserting that translocation helps manage aggressive seals.
- Statements asserting translocation to the MHI and back to the NWHI may increase the potential for disease introduction.
- Stress of travel on weaning pups and the seal family should be evaluated.

- The translocation process must thoroughly be described and evaluated in the PEIS including but not limited to:
    - sex and age of animals to be moved;
    - description of capture and transport;
    - possible release sites; adequacy of health care facilities for seals that may need medical attention;
    - the need for a testing phase to evaluate a larger-scale program;
    - potential value of simultaneous translocation to and from the NWHI;
    - monitoring sites to compare reproductive rates;
    - evaluation of human-seal interactions;
    - steps to prevent illegal shooting of seals;
    - risks of altering sex ratios; and
    - public outreach efforts to develop public cooperation.
- If NMFS proceeds with translocation, local volunteers must be prepared with timely information, professional training about interacting with potentially angry residents, and signage that works.
- Translocating monk seals to the MHI (where populations could reach 400 to 500 seals) is dangerous to our fisheries, visitors, residents, and monk seals because there will increase human-seal interactions. Moving monk seals to areas where there is less chance of interactions makes better sense.
- Moving aggressive male seals to the MHI will be dangerous.
- Comments expressing concerns that translocating seals may be harmful or may alter their natural behavior including foraging habits and interactions with other seals. Translocating seals may break up cohesive family units of seals.
- NMFS needs to address other issues such as ocean debris and starvation rather than relocating monk seal mother and pups to the MHI. This will only cause more problems and increase human-seal interactions.

- Comments stating that NMFS should first test whether translocation works and/or that translocations should be limited to other parts of Hawai`i and not the MHI. NMFS should first test translocating animals from the MHI to the NWHI or trading adult seals from the MHI for juvenile seals in the NWHI.
- Suggestions that each island should have a quota of seals that could be translocated.
- Only aggressive males should be translocated, not pups.
- Monk seals located in Maui should stay on Maui.
- Comments asserting that monk seals should not be translocated to Kaua`i.
- More detail is needed about the translocation plan including locations where NMFS would like to translocate seals and the carrying capacity of these locations.
- Statements expressing concerns about the potential risks to monk seals of the translocation process, especially for pups, and questions about what NMFS will do if seals die during translocation.

2.2.3.3 Behavior Modification

- Behavior modification should be removed from the plan. Wild seals should be kept wild.
- Statements asserting that monk seals have not displayed a tendency to avoid humans.
- Comments in support of behavior modification to help monk seals and humans safe by keeping them separate from each other.
- Behavior modification should not focus on seal behavior but human behavior.
- NMFS should consider human behavior modification around monk seals as well as seal behavior modification.
- More information on behavior modification is needed before making a decision as to whether it is a good idea or not.

- Behavior modification may result in monk seals becoming too dependent on humans. Seals are not meant to be trained and then released back into the wild.

- The PEIS should evaluate the full range of aversive conditioning techniques that could be used without posing undue risk or harm to seals including:

    - the range of situations where aversive conditioning might be needed;

    - steps to ensure the methods will be used consistently;

    - steps to ensure aversive conditioning will only be done by authorized individuals;

    - steps to ensure significant injury or harm to seals does not occur; and

    - public outreach efforts to explain policies related to the use of aversive conditioning.

2.2.3.4 Vaccines

- Statements generally supportive of the vaccination program, specifically citing that vaccination helps prevent diseases and epidemics.

- Statements generally opposed to the vaccination program.

- Statements expressing concern about the safety of the vaccination program, including potential side effects, for example cancer.

- Statements that Hawaiian medicine (*la'au lapa'au*) and practitioners be used instead of modern medicine.

- Statements asking for more details about how the vaccination program will be administered.

- Statements concerning implementation and administration of a monitoring program to assess the effects of the vaccination on both the seals and the environment.

- Statements regarding the costs of the vaccination program to the taxpayer.

2.2.3.5 *Deworming*

- Statements generally supportive of the deworming program.
- Statements generally opposed to the deworming program.
- Statements requesting that a Hawaiian practitioner be present when the procedure is administered.
- Deworming techniques are intrusive and should be evaluated. Results of ongoing or completed research should be made available to the public.
- Statements expressing concern about the safety of the deworming program, including toxicity of the drugs and potential side effects.
- Statements asking for more details about how the deworming program will be administered, including: application methods, frequency of treatment, relative numbers of animals to receive treatment by age, sex and location, assessment of risk from handling and treatment, potential side effects.
- Statements requesting details of the steps to be taken to ensure that monitoring and treatment methods used on the animals are well designed.
- Deworming treats parasites that could be harmful.
- Statements regarding the costs of the deworming program to the taxpayer.

2.2.4 *Inadequate Information*

- NMFS should provide more information on the studies to show that the actions NFMS is proposing will best help the seal population.
- More research is necessary before any proposal can be taken seriously.
- The public does not know what NMFS would like to do. The public is not presented with management practices supported by scientific research.
- The public presentation of the PEIS lacks material facts and/or data necessary to properly determine the impact, adverse or otherwise, these actions will have on the environmental and terrestrial life.

2.2.5 *Education / Outreach*

- Formal outreach should have occurred prior to the official PEIS comment period. Before the next series of public meetings, NMFS should have an

education outreach meeting to provide information on recent scientific findings and allow questions to be answered.

- Additional information should be provided before the next phase in the process and extensive discussions should occur before the Draft PEIS is published.
- There is a need for providing education and information to the public and the varied communities throughout the islands about the monk seal and NOAA's conservation efforts.
- NMFS should develop a "culture of co-existence" as part of their outreach program.
- There need to be public service announcements, brochures, public information meetings, and other media outlets addressing the nature and recovery of monk seals.

2.2.6 NEPA

- There needs to be transparency by the agencies involved and responsiveness to the public.
- When conducting future scoping meetings consider having a minimum number of attendees from each community.
- NMFS needs to be able to answer the question "why is it essential to save the monk seal?" and effectively communicate the information to the public.
- A complete Environmental Impact Survey is lacking and must be conducted.
- The PEIS needs to be modified to make it easier for the general public to visualize the proposed plan's critical habitat areas within the MHI.
- A meeting should have been held on Lānaʻi.
- Allow our island representative an opportunity to present along with NMFS at a Native Hawaiian Historic Preservation Council meeting.
- Allow the public to be part of the solution.
- NMFS should rely on Hawaiʻi-grown expertise, knowledge, and community connections to ensure that the people of Hawaiʻi are engaged at every level of decision-making.

2.2.7 ESA

- The ESA regulations direct and require recovery activities, for successful programs the people of Hawai'i must support them.
- Under the ESA, you have to demonstrate that the activity truly benefits the animals or the population as a whole.
- The target population goals necessary for de-listing of this critically endangered species may no longer be attainable due to change in ocean production, global sea rise, and change in atoll/near shore carrying capacity. Individual atolls may not have suitable habitat for 100 seals at the NWHI six main breeding sub-populations.
- Any human neglectful actions should be dealt with swiftly, publicly, and heavily— enforce penalty.

2.2.8 Permits

- Take permits allow invasive research techniques.
- The permit process is too long and should be streamlined and expedited.

2.2.9 Data

- NMFS already has existing data that need to be analyzed. NMFS research data should be made available to the public.

2.2.10 Socioeconomics

- The cost of recovery (as outlined in the 2007 Recovery Plan) is unjustifiable and unaffordable (in today's economy).
- Statements expressing concern over possible future restrictions to ocean areas and resources as a result of relocation to MHI.
- Statements regarding economic opportunities created by monk seals, for example seal-based tourism.
- Statements expressing concern about possible economic impacts to retail fish businesses that sell reef fish.

2.2.11 Human-Seal Interactions

- Statements that monk seals are not dangerous to humans.
- Statements regarding threats to humans from monk seals, including accounts of humans being attacked by monk seals.
- Statements regarding the number of human-seal interactions due to interactions with fisheries, marine debris, boats, and divers, etc.
- Statements regarding increasing resource conflicts between humans and monk seals, specifically as a result of relocation to MHI.
- Bringing the monk seals to the MHI will also bring the sharks closer to the shore and this will endanger our children when they are swimming thus posing a public safety risk.
- Statements regarding human intrusion/interference with monk seal habitat, for example resting places.
- Statements expressing concern over possible new and stricter rules and regulations to both the general public and subsistence users resulting from human-seal interactions.
- Statements regarding public access to beaches, including calls to shut down public access to monk seal beaches.
- NMFS' directive to not touch, interact, or feed a seal is contrary to the aspect of *'aumakua*.

2.2.12 Hawaiian Monk Seal Biology

- Statements regarding the impacts of NMFS research and enhancement programs on the monk seal population.
- Statements regarding the foraging and feeding behaviors of monk seals.
- Statements concerning the reproduction of monk seals.

2.2.13 Regulatory

- Requests that NMFS identify the state and federal laws that require compliance resulting from this proposed recovery program.
- Comply with Section 106 of the National Historic Preservation Act.

- The federal directive of Environmental Justice must be met.
- Requests to share new information and insights regarding mitigation for monk seals so these measures can be incorporated into any authorizations necessary to be issued. Share directly with the U.S. Army Corps of Engineers office or through the Section 7 consultation process.
- Statements expressing concern that additional regulations and prohibitions will result from the proposed action, especially the alternative addressing translocations to the MHI.
- An increased monk seal population will result in more roped off areas, more restrictions, and closures.
- Local leaders need a thorough education of the NEPA process, ESA, and MMPA.

2.2.14 Unclassified

- Anecdotal comments proving generalized background information about the history, environment and local customs of Hawai`i and its residents but that do not directly address the proposed action.
- Non-informational statements that do not directly address aspects of the proposed action.
- Given the statistics of growth, and the split between the MHI and NWHI, it is clear these animals are not extinct. None of NMFS' proactive programs are needed and monk seals have nothing to gain from humans.
- References provided for NMFS to consider in preparation of the PEIS.
- *Pono* is a spiritual food source.
- Consider asking NPS to be a cooperating agency.
- NMFS' handouts are contradictory regarding human interactions.
- Ocean dead zones may be causing decline.
- False killer whales and shark culling must be considered in cumulative effects analysis.
- Volunteers should be given a badge of authority; a way to show they are NMFS volunteers.

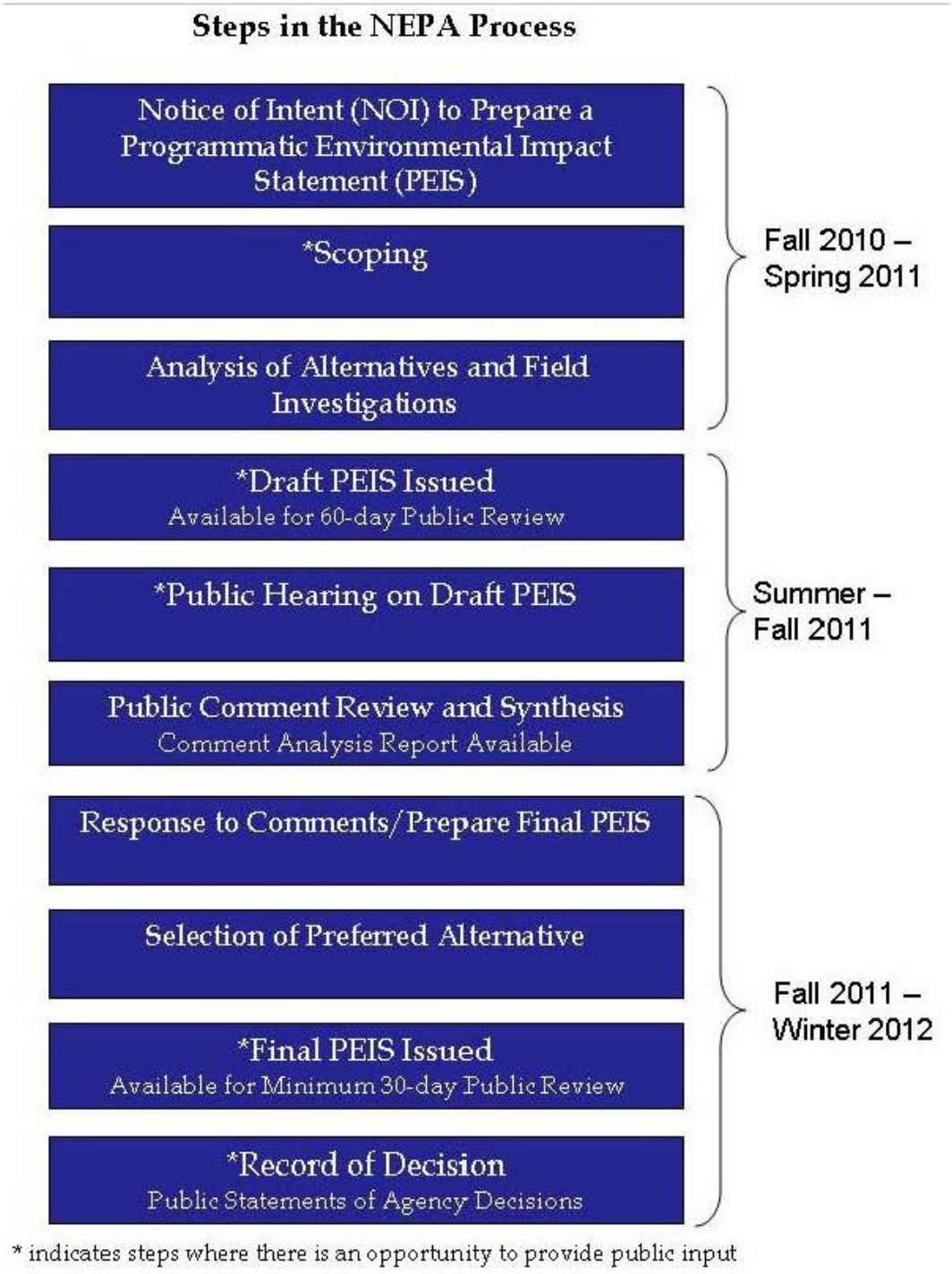
- A short film should be made about the monk seals and should be shown on all incoming flights to the Hawaiian Islands.
- Concerns that this action is linked to the proposed expansion of the Hawaiian Islands Humpback Whale National Marine Sanctuary.
- NMFS is causing a serious social conflict on this island [Kauaʻi].

3.0 SUMMARY OF FUTURE STEPS IN THE PEIS PROCESS

As stated previously, scoping is the first step in the NEPA process in preparation of the PEIS. Figure 3-1 illustrates the remaining steps to complete the Hawaiian Monk Seal Recovery Actions PEIS.

A PEIS is a broad environmental evaluation that examines a program, such as Hawaiian monk seal research and enhancement (recovery) actions, on a large scale. This approach will allow NMFS to be adaptable to changing environmental conditions that may further threaten monk seal survival. The PEIS will analyze the overall program to implement research and enhancement activities over the next 5 to 10 years. The PEIS will evaluate the potential impacts of monk seal research and enhancement activities on the environment including physical, biological, and socioeconomic resources.

Figure 3-1. Steps in the NEPA Process



3.1 DEVELOPMENT OF PROJECT PURPOSE AND NEED

NEPA requires an explanation for the purpose and need to which NMFS is responding in proposing the research alternatives. The purpose and need was presented during the scoping period and presented at the scoping meetings.

The purpose of the proposed action follows the goal of the Hawaiian Monk Seal 2007 Recovery Plan to assure the long-term viability of monk seals in the wild, allowing initially for reclassification to threatened status and, ultimately, removal from the List of Endangered and Threatened Wildlife.

The need for the monk seal research and enhancement program is rooted in fundamental biological and ecological factors that are now limiting the population. The monk seal population has experienced a prolonged decline, and currently only about 1,200 monk seals remain. Numerous threats to the survival of monk seals are identified in the Recovery Plan.

3.2 DESCRIPTION OF AFFECTED ENVIRONMENT

A description of the affected environment is necessary in order to establish a baseline in which to assess the potential impacts of the proposed action and a reasonable range of alternatives. The description of the affected environment will be included in the PEIS and include a summary of existing scientific data available on all potentially effected resources. This step is in progress.

3.3 FORMULATION OF ALTERNATIVES

Preliminary alternatives were developed for presentation to agencies and the public during scoping. These alternatives include distinct choices of various research and enhancement activities that meet the purpose and need. With pertinent input solicited during scoping, the project team will further develop a reasonable range of alternatives to bring forward for analysis in the Draft PEIS. Alternatives eliminated from further consideration and not brought forward for formal analysis in the Draft PEIS will be identified, along with justification for elimination. This step began in December 2010 and will continue through January 2011.

3.4 ANALYZING THE EFFECTS OF THE ALTERNATIVES

After the alternatives have been developed and finalized, the potential effects of each alternative will be analyzed. This process is anticipated to begin in January 2011 and results will be presented in the Draft PEIS.

3.5 WRITE AND PUBLISH THE DRAFT PEIS

The results of the previous steps will be assembled in a Draft PEIS that will be published for a 60-day public review period. NMFS will publish a Notice of Availability in the *Federal Register*, which will identify the timing of the review period, time and location of public hearings on the Draft PEIS, and the deadlines

for submitting comments on the Draft PEIS. The project website will be updated and a project newsletter will be developed and distributed that also includes this information. Those who are on the mailing list will receive email notification of the availability of the Draft PEIS and newsletter. NMFS anticipates publishing the Draft PEIS and holding public meetings during the summer/fall of 2011.

3.6 ISSUING THE PROPOSED FINAL PEIS

NMFS will analyze and respond to substantive comments received in response to the Draft PEIS. These comments and responses will be assimilated and published in a Comment Analysis Report. NMFS may make changes to the PEIS reflecting comments received. NMFS will select a preferred alternative and present this to the public in the Final PEIS. The document will be published and public notices of the document's availability will be made. This step in the process also includes a 30-day protest period. NMFS anticipates the Final PEIS will be published in winter 2011/2012.

4.0 CONTACTS

For further information regarding this Scoping Report, or other aspects of the Hawaiian Monk Seal Recovery Actions PEIS, please use the following contact information:

Jeff Walters, Project Manager and Hawaiian Monk Seal Recovery Coordinator
Protected Resources Division
Pacific Islands Regional Office
NOAA National Marine Fisheries Service
1601 Kapiolani Boulevard, Suite 1110
Honolulu, HI 96814
monkseal@noaa.gov
http://www.nmfs.noaa.gov/pr/permits/eis/Hawaiianmonkseal.htm

Attachment A
Federal Register NOI and
Scoping Comment Period
Extension

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Dated: September 24, 2010.

Susan H. Kuhbach,

Acting Deputy Assistant Secretary for Antidumping and Countervailing Duty Operations.

[FR Doc. 2010–24731 Filed 9–30–10; 8:45 am]

BILLING CODE 3510–DS–P

DEPARTMENT OF COMMERCE

International Trade Administration

Aerospace Supplier Development Mission to China; Recruitment Reopened for Additional Applications

AGENCY: International Trade Administration, Department of Commerce.

ACTION: Notice.

Timeframe for Recruitment and Applications

Mission recruitment will be conducted in an open and public manner, including publication in the **Federal Register**, posting on the Commerce Department trade mission calendar (*http://www.ita.doc.gov/doctm/tmcal.html*) and other Internet web sites, press releases to general and trade media, direct mail, notices by industry trade associations and other multiplier groups, and publicity at industry meetings, symposia, conferences, and trade shows.

The recruitment has reopened and the deadline for additional applications is extended to September 29, 2010. The U.S. Department of Commerce will review all additional applications after the deadline. We will inform applicants of selection decisions as soon as possible after the deadline. Applications received after the deadline will be considered only if space and scheduling constraints permit.

Companies who have already applied do not need to reapply.

Contacts

U.S. Commercial Service Domestic Contact

Lisa Huot, 202–482–2796, *Lisa.Huot@trade.gov*.

Lisa Huot,

Trade Promotion Programs, International Trade Specialist, U.S. Commercial Service.

[FR Doc. 2010–24637 Filed 9–30–10; 8:45 am]

BILLING CODE P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XZ21

Notice of Intent to Prepare a Programmatic Environmental Impact Statement on Implementing Recovery Actions for Hawaiian Monk Seals

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce.

ACTION: Notice of Intent to prepare a Programmatic Environmental Impact Statement; announcement of public scoping period; request for comments.

SUMMARY: The National Marine Fisheries Service (NMFS) announces its intent to prepare a Programmatic Environmental Impact Statement (PEIS) to analyze the environmental impacts of implementing specific management actions and administering the associated research and enhancement program for Hawaiian monk seals (*Monachus schauinslandi*) in the Northwestern and Main Hawaiian Islands. Publication of this notice begins the official public scoping process that will help identify alternatives and determine the scope of environmental issues to be considered in the PEIS.

ADDRESSES: Written statements and questions regarding the public scoping process must be postmarked by November 15, 2010. To be included on a mailing list and receive newsletters and copies of the Draft and Final PEIS, please send mailing address and/or email address to Jeff Walters, Hawaiian Monk Seal Recovery Coordinator, Protected Resources Division, NOAA NMFS Pacific Islands Regional Office, 1601 Kapiolani Blvd., Suite 1110, Honolulu, HI 96814. Comments on this notice and the scoping process for this action may be submitted by:

- Mail: 1601 Kapiolani Blvd., Suite 1110, Honolulu, HI 96814.
- Scoping Meetings: Oral and written comments will be accepted during the upcoming scoping meetings. See **SUPPLEMENTARY INFORMATION**, SCOPING MEETINGS (below) for dates and locations of public scoping meetings for this issue.
- Email: *monkseal@noaa.gov*.

FOR FURTHER INFORMATION CONTACT: Jeff Walters, NMFS Pacific Islands Regional Office, 1601 Kapiolani Blvd., Suite 1110, Honolulu, HI 96814, or via the following email address: *monkseal@noaa.gov*.

SUPPLEMENTARY INFORMATION: NMFS is the Federal agency responsible for management of Hawaiian monk seals, under the Endangered Species Act (ESA; 16 U.S.C. 1531 *et seq.*) and the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1361 *et seq.*). NMFS funds and conducts research and enhancement activities on Hawaiian monk seals in the Northwestern Hawaiian Islands (NWHI) and Main Hawaiian Islands (MHI). In 1976, NMFS listed Hawaiian monk seals as "endangered" under the ESA and "depleted" under the MMPA. As required under section 4 of the ESA, NMFS published a Recovery Plan for the species in 1983, which was revised in 2007. The funds administered by NMFS to implement recovery actions, including research and enhancement, have been designated by Congress and allocated within NMFS' annual budgets for the purpose of promoting Hawaiian monk seal recovery. The intent of this PEIS is to evaluate, in compliance with the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*), the potential direct, indirect, and cumulative impacts on the human environment of the alternative approaches to implementing recovery actions, including research and enhancement activities, under the Hawaiian monk seal recovery program.

Background

The Hawaiian monk seals' population has experienced a prolonged decline and currently only approximately 1,200 monk seals remain. Numerous threats to the survival of Hawaiian monk seals are identified in the Hawaiian monk seal Recovery Plan. In the NWHI, young seals are starving, pups are being killed by sharks, seals are getting entangled in marine debris, and sea level rise threatens terrestrial habitats. Low juvenile survival over the past two decades is the primary cause of the population's decline. There is insufficient recruitment into the breeding population, and the population decline will likely continue without intervention. Enhancement activities, including but not limited to translocating seals from areas of lower to higher survival probability, are being considered to improve juvenile survival and the overall health of the population.

The purpose of implementing recovery activities for Hawaiian monk seals is to promote the recovery of the species population to levels at which ESA protection is no longer needed. Research, enhancement, and management activities on Hawaiian monk seals considered in this PEIS are funded, undertaken, and permitted by NMFS, which are federal actions requiring NEPA compliance. The need for this action is rooted in fundamental

biological and ecological factors that are now limiting the population. As part of this action, NMFS is developing measures that will help identify factors limiting the population, minimize human-induced impacts and other factors affecting survival, promote recovery, prevent harm, and avoid jeopardy or continued disadvantage to the species. Research and monitoring will continue to play a key role in determining whether enhancement activities achieve their desired outcomes.

NMFS administers funds that have been designated by Congress and allocated within NMFS' annual budget for the purpose of implementing recovery actions on Hawaiian monk seals. Using these funds, NMFS implements various management, research, and enhancement activities for recovery of the species. This PEIS would satisfy the NEPA compliance requirements for funding and undertaking recovery actions for Hawaiian monk seals, including the subset of actions requiring MMPA and ESA permits.

The purposes of the ESA, as described in section 2, are to provide a means whereby the ecosystems upon which threatened and endangered species may depend may be conserved, to provide a program for the conservation of such threatened and endangered species, and to take such steps as may be appropriate to achieve the purposes of the treaties and conventions set forth in section 2(a) of the ESA.

Proposed Action and Possible Alternatives

This notice initiates a public scoping period that will help determine the structure of each alternative considered in the PEIS. NMFS has identified the proposed action and several other alternatives, including the No Action Alternative. The final scope and structure of the alternatives will reflect the combined input from the public, research institutions, affected State and Federal agencies, and NMFS administrative and research offices. The number and structure of the alternatives that are analyzed in the PEIS will be determined at a later date. Themes to include in the range of potential alternatives are presented here to provide a framework for public comments:

• No Action Alternative: Under this alternative, currently permitted research and enhancement activities on Hawaiian monk seals would continue until expiration of the permit in 2014 (NMFS ESA-MMPA Permit No. 10137–04 issued to the NMFS Pacific Islands Fisheries Science Center). Recovery Plan actions authorized by this permit would not be implemented beyond 2014. Currently, the existing research and enhancement activities include, but are not limited to:

1. Population assessment (e.g., counting, resighting, marking for identification, flipper tags);
2. Health and disease studies (e.g., tissue sampling, morphometric measurements);
3. Foraging studies (e.g., telemetry, scat collection);
4. De-worming research (e.g., fecal samples, testing anti-parasite treatments);
5. Translocation of weaned pups within the NWHI to improve juvenile survival;
6. Mitigation of fishery interactions (e.g., disentanglement, removal of fishing hooks); and
7. Mitigation of adult male aggression (e.g., removal and relocation of aggressive males).

• Status Quo Alternative: The Status Quo Alternative would consist of the existing types and scope of management, research and enhancement activities (including those identified in the No Action Alternative). New permits would be issued to maintain the current levels of research and enhancement activities. Existing management activities include but are not limited to protecting seals that haul out on recreational beaches and creating effective outreach messages, brochures, signs and volunteer programs to minimize human disturbance and other adverse impacts.

• Enhanced Implementation Alternative (Proposed Action): The Proposed Action would result in implementation and continuation of activities identified in the Status Quo, as well as additional activities to achieve more comprehensive Recovery Plan implementation. These additional activities would include, but are not limited to:

1. Vaccination studies (including potential vaccination);
2. Aversive conditioning (e.g., the development of tools to modify undesirable seal behavior including interactions with humans or domestic animals);
3. Archipelago-wide translocation to improve juvenile survival; and
4. De-worming.

The PEIS will assess the direct, indirect, and cumulative effects of implementing the alternative approaches for funding, undertaking, and permitting the management, research and enhancement activities on Hawaiian monk seals as well as other components of the marine ecosystem and human environment. Anyone having relevant information they believe NMFS should consider in its analysis should provide a description of that information along with complete citations for supporting documents.

Public Involvement

Scoping is an early and open process for determining the scope of issues to be addressed in a PEIS and for identifying the significant issues related to the proposed action. A principal objective of the scoping and public involvement process is to identify a range of reasonable management alternatives that will delineate critical issues and provide a clear basis for distinguishing among those alternatives and selecting a preferred alternative. Through this notice, we are notifying the public that a NEPA analysis and decision—making process for this proposed action has been initiated so that interested or affected people may participate and contribute to the final decision. NMFS will ask for additional public comments once the Draft PEIS is prepared and available. For additional information about Hawaiian monk seals and the PEIS process, please visit our website at *http://www.nmfs.noaa.gov/pr/permits/eis/hawaiianmonkseal.htm*. NMFS estimates the Draft PEIS will be available in late spring 2011.

Scoping Meetings

Public scoping meetings will be held on the following dates, times, and locations:

1. Wednesday, October 20, 2010, 5:30 — 8:30 p.m., Central Union Church, 1660 South Beretania Street, Honolulu, O'ahu;
2. Thursday, October 21, 2010, 6 — 9 p.m., Mokupāpapa Discovery Center, 308 Kamehameha Avenue, Suite 109, Hilo, Hawai'i;
3. Monday, October 25, 2010, 6 — 9 p.m., NOAA Sanctuaries New Community Learning Center, 726 South Kīhei Road, Kīhei, Maui;
4. Tuesday, October 26, 2010, 6 — 9 p.m., Hale Mahaolu Home Pumehana, 290 Kolapa Place, Kaunakakai, Moloka'i; and
5. Wednesday, October 27, 2010, 6 — 9 p.m., Wilcox Elementary School, 4319 Hardy Street, Līhu'e, Kaua'i.

Comments will be accepted at these meetings as well as during the scoping period, and can be submitted to NMFS by November 15, 2010 (see **FOR FURTHER INFORMATION CONTACT**). We request that you include in your comments: (1) Your name, address, and affiliation (if any); and (2) Any background documents to

support your comments as you think necessary.

Special Accommodations

These meetings are accessible to people with disabilities. Requests for sign language interpretation or other auxiliary aids should be directed to Rachel Sprague, (808) 944–2200 (phone) or (808) 973–2941 (fax), at least 5 days before the scheduled meeting date.

Dated: September 22, 2010.

Eric C. Schwaab,

Assistant Administrator for Fisheries, National Marine Fisheries Service.

[FR Doc. 2010–24738 Filed 9–30–10; 8:45 am]

BILLING CODE 3510–22–S

DEPARTMENT OF COMMERCE

International Trade Administration

[A–201–838]

Seamless Refined Copper Pipe and Tube From Mexico: Final Determination of Sales at Less Than Fair Value

AGENCY: Import Administration, International Trade Administration, Department of Commerce.

SUMMARY: The U.S. Department of Commerce ("the Department") has determined that imports of seamless refined copper pipe and tube ("copper pipe and tube") from Mexico are being, or are likely to be, sold in the United States at less than fair value ("LTFV"), as provided in section 735 of the Tariff Act of 1930, as amended ("the Act"). The estimated margins of sales at LTFV are listed in the "Continuation of Suspension of Liquidation" section of this notice.

DATES: *Effective Date:* October 1, 2010.

FOR FURTHER INFORMATION CONTACT: Joy Zhang or George McMahon, AD/CVD Operations, Office 3, Import Administration, International Trade Administration, U.S. Department of Commerce, 14th Street and Constitution Avenue, NW., Washington DC 20230; telephone: (202) 482–1168 or (202) 482–1167, respectively.

SUPPLEMENTARY INFORMATION:

Background

On May 12, 2010, the Department published in the **Federal Register** its preliminary determination on copper pipe and tube from Mexico. *See Seamless Refined Copper Pipe and Tube from Mexico: Notice of Preliminary Determination of Sales at Less Than Fair Value and Postponement of Final Determination,* 75 FR 26726 (May 12, 2010) ("*Preliminary Determination*").[1] We selected the following companies for individual examination: IUSA S.A. de C.V. ("IUSA") and Nacional de Cobre, S.A. de C.V. ("Nacobre").

See Preliminary Determination, 75 FR at 26726.

As provided in section 782(i) of the Act, we conducted sales and cost verifications of the questionnaire responses submitted by IUSA and Nacobre. We used standard verification procedures, including examination of relevant accounting and production records, as well as original source documents provided by IUSA and Nacobre.[2] All verification reports are on file and available in the Central Records Unit ("CRU"), Room 7046, of the main Department of Commerce building.

On July 23, 2010 and July 26, 2010, respectively, IUSA and Nacobre, submitted sales and cost databases with revisions that reflect the minor corrections presented during their respective verifications.[3] IUSA, Nacobre, and the petitioners[4] filed their case briefs with the Department on August 4, 2010, and rebuttal briefs on August 10, 2010. At the petitioners' request, we held a hearing on August 12, 2010.

We used IUSA's July 23, 2010, and Nacobre's July 26, 2010, sales and cost databases to calculate IUSA's and Nacobre's antidumping duty margin. No parties have objected to the use of these databases.

On September 13, 2010, the Department placed a memorandum on the record of this case regarding a recent *ex parte* meeting in which Francisco J. Sánchez, Under Secretary for International Trade Administration met with Mr. Carlos Peralta, President and Director General of IUSA. The Department invited interested parties to comment on this memorandum by September 17, 2010; however, no comments were received.

Period of Investigation

The period of investigation ("POI") is July 1, 2008, to June 30, 2009. This period corresponds to the four most recent fiscal quarters prior to the month of the filing of the petition. *See* 19 CFR 351.204(b)(1).

Scope of Investigation

For the purpose of this investigation, the products covered are all seamless circular refined copper pipes and tubes, including redraw hollows, greater than or equal to 6 inches (152.4 mm) in length and measuring less than 12.130 inches (308.102 mm) (actual) in outside diameter ("OD"), regardless of wall thickness, bore (*e.g.,* smooth, enhanced with inner grooves or ridges), manufacturing process (*e.g.,* hot finished, cold-drawn, annealed), outer surface (*e.g.,* plain or enhanced with grooves, ridges, fins, or gills), end finish (*e.g.,* plain end, swaged end, flared end, expanded end, crimped end, threaded), coating (*e.g.,* plastic, paint), insulation, attachments (*e.g.,* plain, capped, plugged, with compression or other fitting), or physical configuration (*e.g.,* straight, coiled, bent, wound on spools).

The scope of this investigation covers, but is not limited to, seamless refined copper pipe and tube produced or comparable to the American Society for Testing and Materials ("ASTM") ASTM–B42, ASTM–B68, ASTM–B75, ASTM–B88, ASTM–B88M, ASTM–B188, ASTM–B251, ASTM–B251M, ASTM–B280, ASTM–B302, ASTM–B306, ASTM–359, ASTM–B743, ASTM–B819, and ASTM–B903 specifications and meeting the physical parameters described therein. Also included within the scope of this investigation are all sets of covered products, including "line sets" of seamless refined copper tubes (with or without fittings or insulation) suitable for connecting an outdoor air conditioner or heat pump to an indoor evaporator unit. The phrase "all sets of covered products" denotes any combination of items put up for sale that is comprised of merchandise subject to the scope.

"Refined copper" is defined as: (1) Metal containing at least 99.85 percent by weight of copper; or (2) metal containing at least 97.5 percent by weight of copper, provided that the

[1] On May 28, 2010, the Department also published in the **Federal Register**, *Seamless Refined Copper Pipe and Tube From Mexico: Correction to Notice of Preliminary Determination of Sales at Less Than Fair Value 75 FR 29990 (May 28, 2010) and Postponement of Final Determination* to correct the Scope section of the *Preliminary Determination.*

[2] *See* Memorandum to the File titled "Verification of the Sales Response of IUSA S.A. de C.V. ("IUSA") and its affiliates ("IUSA") in the Antidumping Duty Investigation of Seamless Refined Copper Pipe and Tube from Mexico, dated July 21, 2010" "Verification of the Cost Response of IUSA, S.A. de C.V. in the Antidumping Duty Investigation of Seamless Refined Copper Pipe and Tube from Mexico, dated July 19, 2010" "Verification of the Sales Response of Nacobre, S.A. de C.V. and its affiliates ("Nacobre") in the Antidumping Duty Investigation of Seamless Refined Copper Pipe and Tube from Mexico," dated July 21, 2010, and "Verification of the Cost Response of Nacobre, S.A. de C.V. and its affiliates ("Nacobre") in the Antidumping Duty Investigation of Seamless Refined Copper Pipe and Tube from Mexico," dated July 22, 2010.

[3] *See* IUSA's July 23, 2010, and Nacobre's July 26, 2010, submission of the sales and cost databases.

[4] The petitioners in this investigation are Cerro Flow Products, Inc., KobeWieland Copper Products, LLC, Mueller Copper Tube Products, Inc., and Mueller Copper Tube Company, Inc. (collectively, "petitioners").

due to space limitations via webcast only—and will be streamed live on the BBG's public Web site at *http://www.bbg.gov.* The meeting will also be made available on the BBG's public Web site for on-demand viewing.

CONTACT PERSON FOR MORE INFORMATION: Persons interested in obtaining more information should contact Paul Kollmer-Dorsey at (202) 203–4545.

Paul Kollmer-Dorsey,

Deputy General Counsel.

[FR Doc. 2010–28617 Filed 11–9–10; 11:15 am]

BILLING CODE 8610–01–P

DEPARTMENT OF COMMERCE

Foreign-Trade Zones Board

[Docket 64–2010]

Foreign-Trade Zone 78—Nashville, TN; Application for Expansion

An application has been submitted to the Foreign-Trade Zones Board (the Board) by the Metropolitan Government of Nashville and Davidson County, grantee of FTZ 78, requesting authority to expand FTZ 78 to include sites in La Vergne, Clarksville and Gallatin, Tennessee. The application was submitted pursuant to the provisions of the Foreign-Trade Zones Act, as amended (19 U.S.C. 81a-81u), and the regulations of the Board (15 CFR part 400). It was formally filed on November 5, 2010.

FTZ 78 was approved by the Board on April 2, 1982 (Board Order 190, 47 FR 16191, 4/15/82) and expanded on February 18, 1999 (Board Order 1024, 64 FR 9472, 2/26/1999), October 24, 2000 (Board Order 1124, 65 FR 66231, 11/03/2000), and September 30, 2002 (Board Order 1249, 67 FR 62697, 10/08/2002). The current zone project includes the following sites: *Site 1* (1.2 acres)—General-Warehousing Space, 750 Cowan Street, Nashville; *Site 2* (57.0 acres)—Cockrill Bend Industrial Park, 7355 Cockrill Bend Boulevard, Nashville; *Site 3* (9.2 acres)—Irish Express Way Logistics, 323 Mason Road, La Vergne; *Site 4* (39 acres)—Space Park North Industrial Park, 1000 Cartwright Street, Goodlettsville; *Site 5* (19 acres)—Old Stone Bridge Industrial Park, Old Stone Bridge, Goodlettsville; *Site 6* (806 acres)—Nashville International Airport, One Terminal Drive, Nashville; and *Site 7* (80 acres)—Eastgate Business Park, 3850 Eastgate Boulevard, Lebanon.

The applicant is requesting authority to expand the zone to include sites in La Vergne, Clarksville and Gallatin, Tennessee: *Proposed Site 8* (55.0 acres)—Ozburn-Hessey Logistics, 300 New Sanford Road, La Vergne; *Proposed Site 9* (1,546.0 acres)—Clarksville Commerce Park, between Highway 79 and Rossview Road on International Boulevard, Clarksville; *Proposed Site 10* (139.0 acres)—River Chase Barge Port, 41A Bypass and Beacon Road, Clarksville; *Proposed Site 11* (500.0 acres)—Nyrstar Company, 1800 Zinc Plant Road, Clarksville; and *Proposed Site 12* (451.0 acres)—Gallatin Industrial Center, Airport Road and Gateway Drive, Gallatin. The sites will provide warehousing and distribution services to area businesses. No specific manufacturing authority is being requested at this time. Such requests would be made to the Board on a case-by-case basis.

In accordance with the Board's regulations, Maureen Hinman of the FTZ Staff is designated examiner to evaluate and analyze the facts and information presented in the application and case record and to report findings and recommendations to the Board.

Public comment is invited from interested parties. Submissions (original and 3 copies) shall be addressed to the Board's Executive Secretary at the address below. The closing period for their receipt is January 11, 2011. Rebuttal comments in response to material submitted during the foregoing period may be submitted during the subsequent 15-day period to January 26, 2011.

A copy of the application will be available for public inspection at the Office of the Executive Secretary, Foreign-Trade Zones Board, Room 2111, U.S. Department of Commerce, 1401 Constitution Avenue, NW., Washington, DC 20230–0002, and in the "Reading Room" section of the Board's Web site, which is accessible via *http://www.trade.gov/ftz.*

For further information, contact Maureen Hinman at *maureen.hinman@trade.gov* or (202) 482–0627.

Dated: November 5, 2010.

Andrew McGilvray,

Executive Secretary.

[FR Doc. 2010–28573 Filed 11–10–10; 8:45 am]

BILLING CODE P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XZ21

Notice of Intent To Prepare a Programmatic Environmental Impact Statement on Implementing Recovery Actions for Hawaiian Monk Seals

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce.

ACTION: Notice of Intent to prepare a Programmatic Environmental Impact Statement; extension of public scoping period; request for comments.

SUMMARY: On October 1, 2010, NMFS published a Notice of Intent to prepare a Programmatic Environmental Impact Statement (PEIS) on Recovery Actions for Hawaiian monk seals (75 FR 60721). Public comments were due by November 15, 2010. NMFS has decided to allow additional time for submission of public comments on this action.

DATES: The public comment period for this action has been extended 15 days. Written comments must be received or postmarked by November 30, 2010.

ADDRESSES: Comments on the Notice of Intent and the scoping process for this action may be submitted by:

- *Mail:* National Marine Fisheries Service, Pacific Islands Regional Office, Hawaiian Monk Seal Recovery Actions PEIS, 1601 Kapiolani Blvd., Suite 1110, Honolulu, HI 96814; or
- *E-mail: monkseal@noaa.gov.*

To be included on a mailing list and receive newsletters and copies of the Draft and Final PEIS, please send your mailing address and/or e-mail address to Jeff Walters, Hawaiian Monk Seal Recovery Coordinator, Protected Resources Division, NOAA NMFS Pacific Islands Regional Office, 1601 Kapiolani Blvd., Suite 1110, Honolulu, HI 96814, or via the following e-mail address: *monkseal@noaa.gov.*

FOR FURTHER INFORMATION CONTACT: Jeff Walters, NMFS Pacific Islands Regional Office, 1601 Kapiolani Blvd., Suite 1110, Honolulu, HI 96814, or *monkseal@noaa.gov.*

SUPPLEMENTARY INFORMATION: The Notice of Intent, published on October 1, 2010, is available upon request and can be found on the following Web site: *http://www.nmfs.noaa.gov/pr/permits/eis/hawaiianmonkseal.htm.*

The PEIS will assess the direct, indirect, and cumulative effects of implementing the alternative approaches for funding, undertaking,

and permitting the management, research and enhancement activities on Hawaiian monk seals as well as other components of the marine ecosystem and human environment. Anyone having relevant information they believe NMFS should consider in its analysis should provide a description of that information along with complete citations for supporting documents.

NMFS has provided a potential proposed action and several other alternative actions in the October 1, 2010 Notice of Intent. The final scope and structure of the alternatives, to be determined at a later date, will reflect the combined input from the public, research institutions, affected State and Federal agencies, and NMFS administrative and research offices. A principal objective of the scoping and public involvement process is to determine a range of reasonable management alternatives that will identify critical issues, and provide a clear basis for distinguishing among those alternatives and selecting a preferred alternative.

Comments will be accepted during the scoping period through November 30, 2010. We request that you include in your comments: (1) Your name, address, and affiliation (if any); and (2) Any relevant background documents to support your comments.

Dated: November 5, 2010.

Samuel D. Rauch III,

Deputy Assistant Administrator for Regulatory Programs, National Marine Fisheries Service.

[FR Doc. 2010–28517 Filed 11–10–10; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

Evaluation of State Coastal Management Programs and National Estuarine Research Reserves

AGENCY: National Oceanic and Atmospheric Administration (NOAA), Office of Ocean and Coastal Resource Management, National Ocean Service, Commerce.

ACTION: Notice of intent to evaluate and notice of availability of final findings.

SUMMARY: The NOAA Office of Ocean and Coastal Resource Management (OCRM) announces its intent to evaluate the performance of the Louisiana Coastal Resources Management Program and the Jobos Bay (Puerto Rico), Rookery Bay (Florida), and Chesapeake Bay (Maryland) National Estuarine Research Reserves.

The Coastal Zone Management Program evaluation will be conducted pursuant to section 312 of the Coastal Zone Management Act of 1972, as amended (CZMA) and regulations at 15 CFR part 923, subpart L. The CZMA requires continuing review of the performance of states with respect to coastal program implementation. Evaluation of a Coastal Management Program requires findings concerning the extent to which a state has met the national objectives, adhered to its Coastal Management Program document approved by the Secretary of Commerce, and adhered to the terms of financial assistance awards funded under the CZMA.

The National Estuarine Research Reserve evaluations will be conducted pursuant to sections 312 and 315 of the CZMA and regulations at 15 CFR part 921, subpart E and part 923, subpart L. Evaluation of a National Estuarine Research Reserve requires findings concerning the extent to which a state has met the national objectives, adhered to its Reserve final management plan approved by the Secretary of Commerce, and adhered to the terms of financial assistance awards funded under the CZMA.

Each evaluation will include a site visit, consideration of public comments, and consultations with interested Federal, state, and local agencies and members of the public. A public meeting will be held as part of the site visit. When the evaluation is completed, OCRM will place a notice in the **Federal Register** announcing the availability of the Final Evaluation Findings. Notice is hereby given of the dates of the site visits for the listed evaluations, and the dates, local times, and locations of the public meetings during the site visits.

Dates and Times: The Louisiana Coastal Resources Management Program evaluation site visit will be held January 3–7, 2011. One public meeting will be held during the week. The public meeting will be held on Monday, January 3, 2011, at 6:30 p.m. in the Griffon Room, LaSalle Building, Capitol Complex, 617 North 3rd Street, Baton Rouge, Louisiana.

The Jobos Bay (Puerto Rico) National Estuarine Research Reserve evaluation site visit will be held January 24–28, 2011. One public meeting will be held during the week. The public meeting will be held on Tuesday, January 25, 2011, at 5 p.m. at the Jobos Bay National Estuarine Research Reserve Visitors' Center, Road 705, Kilometer 2.3, Main Street, Aguirre, Puerto Rico.

The Rookery Bay (Florida) National Estuarine Research Reserve evaluation site visit will be held January 24–28, 2011. One public meeting will be held during the week. The public meeting will be held on Wednesday, January 26, 2011, at 6:30 p.m. at the Rookery Bay National Estuarine Research Reserve Environmental Learning Center, 300 Tower Road, Naples, Florida.

The Chesapeake Bay (Maryland) National Estuarine Research Reserve evaluation site visit will be held January 24–28, 2011. One public meeting will be held during the week. The public meeting will be held on Tuesday, January 25, 2011, at 7 p.m. at the McCann Center, Jug Bay Wetlands Sanctuary, 1361 Wrighton Road, Lothian Maryland.

ADDRESSES: Copies of the states' most recent performance reports, as well as OCRM's evaluation notification and supplemental information request letters to the state, are available upon request from OCRM. Written comments from interested parties regarding these Programs are encouraged and will be accepted until 15 days after the public meeting held for a Program. Please direct written comments to Kate Barba, Chief, National Policy and Evaluation Division, Office of Ocean and Coastal Resource Management, NOS/NOAA, 1305 East-West Highway, 10th Floor, N/ORM7, Silver Spring, Maryland 20910, or *Kate.Barba@noaa.gov*.

SUPPLEMENTARY INFORMATION: Notice is hereby given of the availability of the final evaluation findings for the Rhode Island Coastal Management Program (CMP) and the Tijuana River (California), Padilla Bay (Washington), and North Carolina National Estuarine Research Reserves (NERRs). Sections 312 and 315 of the Coastal Zone Management Act of 1972 (CZMA), as amended, require a continuing review of the performance of coastal states with respect to approval of CMPs and the operation and management of NERRs.

The State of Rhode Island was found to be implementing and enforcing its federally approved coastal management program, addressing the national coastal management objectives identified in CZMA Section 303(2)(A)–(K), and adhering to the programmatic terms of its financial assistance awards. The Tijuana River, Padilla Bay, and North Carolina NERRs were found to be adhering to programmatic requirements of the NERR System.

Copies of these final evaluation findings may be obtained upon written request from: Kate Barba, Chief, National Policy and Evaluation Division, Office of Ocean and Coastal

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Attachment B
Project Mailing List

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Entity	Title	Title 2	First Name 1	Last Name 1	Email	County	Group
Office of Hawaiian Affairs	Clyde		Nāmu'o	711 Kapi'olani Blvd.	info@oha.org	City & County of Honolulu	Agency
NOAA HIHWNMS			Kate	Achilles	kate.achilles@noaa.gov	City & County of Honolulu	Agency
			Aaron	Agena		Kaua'i County	OPIP
Department of Land and Natural Resources	Board of Land and Natural Resources Member - Kauai		Ron	Agor		City & County of Honolulu	Agency
Wai'anae Small Boat Harbor			William	Aila, Jr.		City & County of Honolulu	NGO & Advocacy Grp
NMFS PIRO			Margaret	Akamine		City & County of Honolulu	Agency
			Kelii	Alapai	kelii053158@hotmail.com	Kaua'i County	OPIP
NMFS PIFSC PSD Hawaiian Monk Seal Research Program	Contract Population Modeler		Harting	Albert, PhD		City & County of Honolulu	Agency
National Parks Service Point Reyes National Seashore		Dr.	Sarah	Allen		Outside Hawaii	Agency
HI Humpback Whale Marine Sanctuary - Advisory Council			William	Annonsen	wmanonsen@consultant.com	City & County of Honolulu	NGO & Advocacy Grp
			Bud	Antonelis	bantonelis@aol.com	City & County of Honolulu	OPIP
NMFS PIFSC			Bud	Antonelis		City & County of Honolulu	Agency
Peter Apo Company			Peter	Apo	peterapocompany@gmail.com	City & County of Honolulu	OPIP
			Lehuanani	Aquino	vlehuanani@yahoo.com		OPIP
Oahu Metropolitan Planning Organization	Acting Executive Director and Senior Planner		Lori	Arakaki	oahumpo@oahumpo.org	City & County of Honolulu	NGO & Advocacy Grp
			Deytyn	Asami	n/a	Maui County	OPIP
			Karen	Ashley	karen_ashley@hotmail.com	Maui County	OPIP
			Karen	Ashley	karen_ashley@hotmail.com		
	County Council Chair		Bill "Kaipo"	Asing	kasing@kauai.gov	Kaua'i County	Elected/Appointed Officials
			Adam	Asquith			
			Makana	Bacon	jsbmaab@yahoo.com	Kaua'i County	OPIP
	Council Member		Gladys	Baisa	gladys.baisa@mauicounty.us	Maui County	Elected/Appointed Officials
			Senator Rosalyn	Baker	senbaker@capitol.hawaii.gov	Maui County	Elected/Appointed Officials
NMFS PIFSC PSD Hawaiian Monk Seal Research Program	Research Marine Biologist		Jason	Baker, PhD		City & County of Honolulu	Agency
			Michele	Bane	watermunchkin@netzero.net	Kaua'i County	OPIP
NMFS PIRO PRD	Kaua'i Marine Mammal Response Coordinator		Michele	Bane	watermunchkin@netzero.com	City & County of Honolulu	Agency
			Bill & Brenda	Barnard	b2barnard@aol.com	Kaua'i County	OPIP
NOAA NOS			Brad	Barr		City & County of Honolulu	Agency
			Jennifer	Barrett	mail@jenbarrett.net	City & County of Honolulu	NGO & Advocacy Grp
			Larry	Basch	lbasch@hawaii.edu	City & County of Honolulu	OPIP
NMFS PIFSC PSD Hawaiian Monk Seal Research Program	Wildlife Biologist		Brenda	Becker	brenda.becker@noaa.gov	City & County of Honolulu	Agency
			Chris	Belllows	chris.bellows@seaworld.com		
			Carl	Berg	cberg@pixi.com	Kaua'i County	OPIP
			Hannah	Bernard	wild@aloha.net	Maui County	OPIP
Hawaii Wildlife Fund			Hannah	Bernard	wild@aloha.net	Maui County	NGO & Advocacy Grp
			Barbara & Robert	Billand	whalewatcher03@hotmail.com	City & County of Honolulu	OPIP
			John & Gina	Biondi		Maui County	OPIP
Hawaii Ocean Safety Team - HOST			Robin	Bond	rcbond@hawaii.rr.com	City & County of Honolulu	OPIP
Marine Mammal Commission			Daryl	Boness	boness@megalink.net	Outside Hawaii	Agency
			Keiko	Bonk	kbonk@hawaii.rr.com	City & County of Honolulu	OPIP
Marine Conservation Biology Institute			Keiko	Bonk	kbonk@hawaii.rr.com	City & County of Honolulu	OPIP
Bedford Institute of Oceanography Population Ecology Division			W. Don	Bowen, PhD	bowend@mar.dfo-mpo.gc.ca	Outside Hawaii	OPIP
NMFS PIFSC PSD Hawaiian Monk Seal Research Program	Contract Veterinarian		Robert	Braun, DVM	rbraun@lava.net	City & County of Honolulu	Agency
Star Advertiser	Vice President/Editor		Frank	Bridgewater	fbridgewater@staradvertiser.com	Media	OPIP
NOAA			Megan	Brooker	megan.brooker@noaa.gov	City & County of Honolulu	Agency
			Donna	Brown	donnabro@hawaii.edu	Maui County	OPIP
NPS Kalaupapa NHP	Marine Ecologist		Eric	Brown, PhD	eric_brown@nps.gov	City & County of Honolulu	Agency
			Bob	Bruck	bbruck@hawaii.edu	City & County of Honolulu	NGO & Advocacy Grp
			Nancy & Randal	Bruckner	nanrandy@earthlink.net	Hawaii County	OPIP
			Chris	Brun			
			Adrian	Bulsum		Kaua'i County	OPIP
			Ben	Butler			
	County Council Member		Tim	Bynum	tbynum@kauai.gov	Kaua'i County	Elected/Appointed Officials

Entity	Title	Title 2	First Name 1	Last Name 1	Email	County	Group
NMFS PIFSC PSD Hawaiian Monk Seal Research Program	Foraging Research Associate		Maire	Cahoon		City & County of Honolulu	Agency
	Acting Mayor		Kirk	Caldwell	mayor@honolulu.gov		Elected/Appointed Officials
			Suzanne	Carlon		Maui County	OPIP
			Mayor Bernard	Carvalho, Jr.	mayor@kauai.gov	Kaua'i County	Elected/Appointed Officials
	County Council Member		Dickie	Chang	dchang@kauai.gov	Kaua'i County	Elected/Appointed Officials
			Bradley	Chiba		Kaua'i County	OPIP
			Kara	Chow	karachow84@gmail.com		
NOAA HIHWNMS	Acting Superintendent		Malia	Chow	malia.chow@noaa.gov		Agency
NOAA Office of National Marine Sanctuaries HIHWNMS			Malia	Chow		City & County of Honolulu	Agency
			Mani	Christopher	islandriffic@hawaii.rr.com	Hawaii County	OPIP
			Senator Suzanne	Chun Oakland	senchunoakland@capitol.hawaii.gov	Mauai County	Elected/Appointed Officials
Save Our Seas			Paul	Clark	sos@saveourseas.org	Kaua'i County	NGO & Advocacy Grp
			Shanna & Forrest	Cloud	Zensea1@gmail.com	Kaua'i County	OPIP
Surfrider Foundation			Stuart	Coleman	enviro@surfrider.org	City & County of Honolulu	NGO & Advocacy Grp
Office of Economic Development	Director		George	Costa	gcosta@kauai.gov	Kaua'i County	Agency
			Ellen	Coulombe	ellen.coulombe@gmail.com		
			Kawika	Cutchur		Kaua'i County	OPIP
Western Pacific Fishery Management Council			Paul	Dalzell	paul.dalzell@noaa.gov	City & County of Honolulu	Agency
NMFS PIRO PRD	Maui Nui Marine Mammal Response Coordinator		Nicole	Davis		City & County of Honolulu	Agency
	Volunteer		Paul	DiGangi		Kaua'i County	OPIP
			Steve	Downey	whitekahuna@hawaii.rr.com	Maui County	OPIP
			Heather	Driscoll	heather@themolokaidispatch.com	Maui County	OPIP
			Camilla	Dulac	camilladulac@gmail.com	City & County of Honolulu	OPIP
Monk Seal Mania - Blog			D.B.	Dunlap	dabella50@gmail.com	Media	OPIP
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Maui Department of Water Supply	Director		Jeffrey	Eng		Mauai County	Agency
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		Mr.	Guy	Enriques	genriques@co.hawaii.hi.us	Hawai'I County	Elected/Appointed Officials
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Hawaiian Monk Seal Response Team O'ahu (HMSRTO)			Donna	Festa	donnafesta@aol.com	City & County of Honolulu	NGO & Advocacy Grp
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Department of Parks and Recreatioin	Director	Mr.	Bob	Fitzgerald	parks_recreation@co.hawaii.hi.us	Hawai'I County	Agency
Coral Reef Alliance			Liz	Foote	lfoote@hawaii.rr.com	Maui County	NGO & Advocacy Grp
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Hawai'i Department of Transportation - Harbors Division			Mike	Formby	michael.formby@hawaii.gov	City & County of Honolulu	Agency
The Nature Conservancy of Hawai'i			Mark	Fox	mfox@tnc.org	City & County of Honolulu	NGO & Advocacy Grp
Individual			Bill	Friedl	bill.friedl@gmail.com	City & County of Honolulu	OPIP
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Department of Public Works	County Engineer		Donald	Fujimoto	publicworks@kauai.gov	Kaua'i County	Agency
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	Recreational Fishing Representative		Brian	Funai	bfunai@hawaii.rr.com	City & County of Honolulu	NGO & Advocacy Grp
			Kip	Furugen			
			Leilani	Furugon			
Department of Defense	Adjutant General and Director of Civil Defense		Major General Robert	G. F. Lee		City & County of Honolulu	Agency
			Senator Mike	Gabbard	sengabbard@capitol.hawaii.gov	City & County of Honolulu	Elected/Appointed Officials
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West Hawaii Fisheries Council		Mr.	Rick	Gaffney	rgaffney@pacificboatsales.com	Hawai'I County	OPIP
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Entity	Title	Title 2	First Name 1	Last Name 1	Email	County	Group
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Hawai'i Watchable Wildlife Project (HWWP) HWWP Steering Committee			Bob	Garrison	bob@naturetourismplanning.com	City & County of Honolulu	NGO & Advocacy Grp
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Harold K.L. Castle Foundation			Terry	George	tgeorge@castlefoundation.org	City & County of Honolulu	NGO & Advocacy Grp
			John	Gerharde	john@admediasite.com		OPIP
NMFS Southwest Fisheries Science Center			Tim	Gerrodette	tim.gerrodette@noaa.gov	Outside Hawaii	Agency
Hawai'i Wildlife Fund		Mr.	William	Gilmartin	bill-gilmartin@hawaii.rr.com	Hawai'I County	NGO & Advocacy Grp
Wildlife Conservation Society			Joshua	Ginsberg, PhD	jginsberg@wcs.org	Outside Hawaii	NGO & Advocacy Grp
NMFS PIFSC PSD Hawaiian Monk Seal Research Program	Survival Enhancement Program Lead		Kathleen	Gobush, PhD		City & County of Honolulu	Agency
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NMFS PIRO			Krista	Graham	krista.graham@noaa.gov	City & County of Honolulu	Agency
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			Randall	Haraguchi		Kaua'i County	OPIP
			Cory	Harden		Hawaii County	OPIP
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HI Humpback Whale Marine Sanctuary - Advisory Council			Dale	Hazelhurst	dalehaz@gmail.com	City & County of Honolulu	NGO & Advocacy Grp
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NMFS PIRO PRD	Endangered Species Biologist Critical Habitat		Jean	Higgins		City & County of Honolulu	Agency
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Hawai'i Humpback Whale National Marine Sanctuary-Advisory Council		Mr.	Nan	Howell	nanneric2001@yahoo.com	Hawai'I County	NGO & Advocacy Grp
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			Senator Les	Ihara, Jr.	senihara@capitol.hawaii.gov	Mauai County	Elected/Appointed Officials
		Mr.	Donald	Ikeda	dikeda@co.hawaii.hi.us	Hawai'I County	Elected/Appointed Officials
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			Carl	Jelling		City & County of Honolulu	OPIP
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NOAA Pupahanaumokuakea	Policy Coordinator		Hoku	Johnson	hoku.johnson@noaa.gov		Agency
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	Council Member		Jo Anne	Johnson	jo_anne.johnson@mauicounty.us	Mauai County	Elected/Appointed Officials
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Hawaiian Monk Seal Response Team O'ahu (HMSRTO)			Dana	Jones	woolwahine@gmail.com	City & County of Honolulu	NGO & Advocacy Grp
HI Humpback Whale National Marine Sanctuary - Advisory Council			Steve	Juarez	stevedives@maui.net	Mauai County	NGO & Advocacy Grp
Office of Environmental Quality Control	Director		Genevieve	K.Y. Salmonson	oeqc@doh.hawaii.gov	City & County of Honolulu	Agency
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			Kamoho'alii	Kama			
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Hawai'i Ecotourism Association			Annette	Kaohelauli'i	annettesadventures@juno.com	City & County of Honolulu	NGO & Advocacy Grp
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USACE	Commander and Division Engineer		Colonel Edward	Kertis		City & County of Honolulu	Agency
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Kauai Police Department			Gayle	Kuboyama	gkuboyama@kauai.gov	Kaua'i County	Agency
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Marine Mammal Commission			David	Laist	dlaist@mmc.gov	Outside Hawaii	Agency
US National Park Service			Melia	Lane-Kamahele	melia_lane-kamahele@nps.gov	City & County of Honolulu	Agency
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Kona Kohala Chamber of Commerce - Environmental Committee		Mr.	Teri	Leicher	info@kona-kohala.com	Hawai'I County	OPIP
Hawai'i Humpback Whale National Marine Sanctuary-Advisory Council		Mr.	Teri	Leicher	teri@jacksdivinglocker.com	Hawai'I County	NGO & Advocacy Grp
Planning Department	Director	Mr.	Bobby Jean	Leithead-Todd	planning@co.hawaii.hi.us	Hawai'I County	Agency
Department of Land and Natural Resources Office of Conservation and Coastal Lands	OCCL Administrator		Samuel	Lemmo	dlnr.occl@hawaii.gov	City & County of Honolulu	Agency
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Department of Business, Economic Development and Tourism	Director		Theodore E.	Liu	theodore.e.liu@hawaii.gov	City & County of Honolulu	Agency
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NMFS PIFSC PSD Hawaiian Monk Seal Research Program	Foraging Ecologist		Kenneth	Longenecker, PhD	klongenecker@bishopmuseum.org	City & County of Honolulu	Agency
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NMFS PIFSC PSD Hawaiian Monk Seal Research Program	Field Research Supervisor		Jessica	Lopez		City & County of Honolulu	Agency
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Hawaiian Monk Seal Response Team O'ahu (HMSRTO)			Jennifer	Maldonado		City & County of Honolulu	NGO & Advocacy Grp
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			Ryan	McKeague			
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USFWS Pacific Islands Ecological Field Services Office	Field Supervisor		Loyal	Mehrhoff, PhD	loyal_mehrhoff@fws.gov	City & County of Honolulu	Agency
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Department of Land and Natural Resources Division of Aquatic Resources, ESA Section 6 Program	ITP Program Coordinator		Earl	Miyamoto		City & County of Honolulu	Agency
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Department of Land and Natural Resources Division of Aquatic Resources	HIHWNMS Co-Manager (Acting)		David	Nichols		City & County of Honolulu	Agency
US Natural Resources Conservation Service		Mr.	Patrick	Niemeyer	Patrick.Niemeyer@hi.usda.gov	Hawai'I County	Agency
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Office of Hawaiian Affairs			Jerry	Norris	jerryn@oha.org	City & County of Honolulu	Agency
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			Dean	Ogoshi		City & County of Honolulu	OPIP
			Terry	O'Halloran	terryo@hawaii.rr.com	City & County of Honolulu	OPIP
			David	Okamoto		Kaua'i County	OPIP
DOH-CWB	EHS V	Mr.	Watson	Okubo	watson.okubo@doh.hawaii.gov		Agency

Entity	Title	Title 2	First Name 1	Last Name 1	Email	County	Group
Maui Department of Environmental Management	Director		Cheryl	Okuma, Esq.	environmental.mgmt@co.maui.hi.us	Mauai County	Agency
Fire Department	Fire Chief	Mr.	Darryl	Oliveira	cntyfire@co.hawaii.hi.us	Hawai'I County	Agency
			Mimi	Olry	m_lory@hotmail.com	Kaua'i County	OPIP
		Mr.	Dennis	Onishi	donishi@co.hawaii.hi.us	Hawai'I County	Elected/Appointed Officials
NOAA			Patrick	Opay	patrick.opay@noaa.gov	City & County of Honolulu	Agency
			Basil	Oshiro	soshiro17@hawaii.rr.com		OPIP
			Keith	Oshita			
Seasports Diving			Marvin	Otsuji	marvin@seasportdivers.com	Kaua'i County	NGO & Advocacy Grp
			Mark	Oyama	Moyama@hawaii.edu	Kaua'i County	OPIP
			Ke Kane	Pa			
Department of Land and Natural Resources	Board of Land and Natural Resources Member - Hawaii	Mr.	Robert	Pacheco		Hawai'I County	Agency
Hawai'i Humpback Whale National Marine Sanctuary-Advisory Council		Mr.	Adam	Pack	pack@hawaii.edu	Hawai'I County	NGO & Advocacy Grp
			Aimoku & Lehua	Pali	egkaimokupali@yahoo.com	Maui County	OPIP
NMFS PIFSC PSD	Chief		Frank	Parrish, PhD	frank.parrish@noaa.gov	City & County of Honolulu	Agency
NOAA Office of National Marine Sanctuaries HIHWNMS			Joseph	Paulin, PhD		City & County of Honolulu	Agency
			Jeff	Pawloski	jpawloski@sealifeparkhawaii.com	Oahu	
			Jeffrey	Pawloski	jpawloski@sealifeparkhawaii.com	City & County of Honolulu	OPIP
			Randall	Perez	rlperez@hawaii.edu	City & County of Honolulu	OPIP
			Kekane	PO		Kaua'i County	OPIP
			Lori	Polasek	lorip@alaskasealife.org		
HI Humpback Whale National Marine Sanctuary-Advisory Council			Sharon	Pomeroy	pomroys001@hawaii.rr.com	Kaua'i County	NGO & Advocacy Grp
			Sharon	Pomroy		Kaua'i County	OPIP
	Council Member		Joseph	Pontanilla	joseph.pontanilla@mauicounty.us	Maui County	Elected/Appointed Officials
NMFS PIFSC	Director		Samuel	Pooley, PhD	samuel.pooley@noaa.gov	City & County of Honolulu	Agency
Office of Environmental Quality Control	Director		Katherine	Puana Kealoha, Esq.	OEQC@doh.hawaii.gov		Elected/Appointed Officials
			Keoki	Puaoi	kpuaoi@hawaii.rr.com		
			Tineal	Puaoi	darkdemon102@hotmail.com	Kaua'i County	OPIP
			Keoki	Puaoi	kpuaoi@hawaii.rr.com	Kauai	KeAloha O Ko Lalou 'Aina (Hawaiian Homestead Association for the Anahola REgion)
Marine Mammal Commission			Tim	Ragen	tragen@mmc.gov	Outside Hawaii	Agency
			Darrell	Rapozo	drapozo@gmail.com		
Department of Parks & Recreation	Director		Leonard	Rapozo, JR.	csimao@kauai.gov	Kaua'i County	Agency
			Max	Renigado	thunderdomeinc@hotmail.com		
			Beau	Richter	richter@biology.ucsc.edu		
			Walter	Ritte Jr.	rittew@hotmail.com	Maui County	OPIP
NOAA			Justin	Rivera	justin.rivera@noaa.gov	City & County of Honolulu	Agency
			Wayne	Riverea			
			Darron	Roberts	robertdarrens@gmail.com	Hawaii County	OPIP
US Coast Guard	MPS Manager	Mr.	Eric	Roberts	eric.t.roberts@uscg.mil		Agency
United States Coast Guard	Marine Protected Species Program Manager USCG D14 (dre), Enforecement Branch		Eric	Roberts	eric.t.roberts@uscg.mil	City & County of Honolulu	Agency
US Federal Highway Administration			Eric	Roberts	eric.t.roberts@uscg.mil	City & County of Honolulu	Agency
					mroberts@srgii.com	City & County of Honolulu	OPIP
			Kim	Rogers	kimsrogers@mac.com	Kaua'i County	OPIP
			Rebecca	Rogers	rmrogers@hawaii.edu	Hawaii County	OPIP
			Kimo	Rosa		Kaua'i County	OPIP
			Lauren	Roser	rosalauren@aol.com		
Department of Planning	Director		Kathleen	Ross Aoki	planning@mauicounty.gov	Mauai County	Agency
			Andrew	Rossiter	rossiter@waquarium.org		
			Season	Sakuiantay			
			Dale	Sarver	dalesarver@gmail.com		
			Victor	Sasaki		Kaua'i County	OPIP
US Natural Resources Conservation Service		Ms.	Amy	Saunders	Amy.Saunders@hi.usda.gov	Hawai'I County	Agency
			Jace	Schaefer			
			Robert	Schmidt	robert.h.schmidt@gmail.com		OPIP
NMFS PIRO PRD	Pacific Islands Region Marine Mammal Response Coordinator		T. David	Schofield	david.schofield@noaa.gov	City & County of Honolulu	Agency

Entity	Title	Title 2	First Name 1	Last Name 1	Email	County	Group
University of Hawai'i - Hilo		Ms.	Jenny	Schultz	jschultz@hawaii.edu	Hawai'I County	OPIP
NMFS PIFSC PSD Hawaiian Monk Seal Research Program	Senior Research Fellow - Genetics		Jennifer	Schultz, PhD	jschultz@hawaii.edu	City & County of Honolulu	OPIP
			Callie	Schwab	callie7@hawaii.edu	Hawaii County	OPIP
Office of Environmental Quality Control	Environmental Health Specialist	Mr.	Leslie	Segundo			Elected/Appointed Officials
NMFS PIFSC			Mike	Seki	michael.seki@noaa.gov	City & County of Honolulu	Agency
			Sophia	Senter	alohasophia@live.com	Kaua'i County	OPIP
			Craig	Severgace	sevc@hawaii.edu	Hawaii County	OPIP
			Tad	Sheldon			
			Dennis	Silva			
Fire Department	Fire Chief		Kenneth	Silva		City & County of Honolulu	Agency
Western Pacific Fishery Management Council			Kitty	Simmonds		City & County of Honolulu	Agency
Marine Mammal Commission			Sam	Simmons		Outside Hawaii	Agency
			Colleen	Sindzinski	colleenjo@gmail.com	City & County of Honolulu	OPIP
University of Minnesota Department of Ecology, Evolution and Behavior			Don	Siniff, PhD	sinif001@umn.edu	Outside Hawaii	OPIP
NOAA-NMFS-OPR	Permit Biologist	Ms.	Amy	Sloan	amy.sloan@noaa.gov		Agency
			Senator Sam	Slom	senslom@capitol.hawaii.gov	Mauai County	Elected/Appointed Officials
			Alice	Smith		Maui County	OPIP
NMFS PIRO			Lance	Smith	lance.smith@noaa.gov	City & County of Honolulu	Agency
Fish and Wildlife Service			Caitlin	Snyder	caitlin_snyder@fws.gov	City & County of Honolulu	Agency
			Gregory	Spencer	gspencer@firstwind.com	Maui County	OPIP
NMFS PIRO PRD	Assistant Hawaiian Monk Seal Recovery Coordinator		Rachel	Sprague, PhD	rachel.sprague@noaa.gov	City & County of Honolulu	Agency
NOAA			Kathryn	Stanaway	kathryn.stanaway@noaa.gov	City & County of Honolulu	Agency
Hawai'i Humpback Whale National Marine Sanctuary-Advisory Council		Mr.	Michael	Stanton	mstanton@atlantisadventures.com	Hawai'I County	NGO & Advocacy Grp
University of Hawai'i College of Agriculture, Forestry and Natural Resources Management	Dean	Dr.	William Mokahi	Steiner	steiner@hawaii.edu	Hawai'I County	OPIP
			Stacey	Stella	joelandstacey3@gmail.com	City & County of Honolulu	OPIP
Moloka'i Dispatch	Managing Editor		Megan	Stephenson	editor@themolokaidispatch.com	Media	OPIP
			Cheryl	Sterling	cheryl.sterling@mauicounty.gov	Maui County	OPIP
Maui Office of Economic Development	HTA Product Enrichment Specialist		Cheryl	Sterling	cheryl.sterling@co.maui.hi.us	Mauai County	Agency
			Goldie	Stewart		Kaua'i County	OPIP
			Roxanne	Stewart	rstewart99489@hawaii.rr.com	Hawaii County	OPIP
Malama Kai Foundation			Carolyn	Stewart	mcstewart@hawaii.rr.com	City & County of Honolulu	NGO & Advocacy Grp
USFWS Hawaiian & Pacific Islands National Wildlife Refuge Complex	Project Leader		Barry	Stieglitz		City & County of Honolulu	Agency
Hawaiian Island Resort Scuba Association			Jeff	Strahn	jstrahn@mauidiveshop.com	City & County of Honolulu	NGO & Advocacy Grp
			Mark	Sullivan	marksulli@gmail.com	City & County of Honolulu	OPIP
Cetacean Society International			Patricia	Sullivan		Outside Hawaii	OPIP
			Joel	Sumida		Kaua'i County	OPIP
NMFS PIFSC PSD Hawaiian Monk Seal Research Program	Data Management System Specialist		Jim	Swensen		City & County of Honolulu	Agency
			Mahelani	Sylva	naleohawaiian@aol.com		
Hawai'i Watchable Wildlife Project (HWWP) HWWP Steering Committee			Ray	Tabata		City & County of Honolulu	NGO & Advocacy Grp
		Senator	Dwight	Takamine	sentakamine@capitol.hawaii.gov	Hawai'I County	Elected/Appointed Officials
			Reid & Debbie	Takayawa	hawaiidog@hawaii.rr.com	Hawaii County	OPIP
			Randall	Takenala			
			Lane	Tamuru		Kaua'i County	OPIP
Department of Hawaiian Home Lands			Henry	Tancayo		Mauai County	Agency
			Calvin	Tani		Kaua'i County	OPIP
			Senator Brian	Taniguchi	sentaniguchi@capitol.hawaii.gov	Mauai County	Elected/Appointed Officials
			Phillip	Tanner		Kaua'i County	OPIP
			Elizabeth	Tanner			
			Phillip	Tanner			
Department of Planning and Permitting	Director		David K.	Tanoue		City & County of Honolulu	Agency
			Mayor Charmaine	Tavares	Mayors.Office@mauicounty.gov	Mauai County	Elected/Appointed Officials
			Ken	Taylor	taylork021@hawaii.rr.com	Kaua'i County	OPIP

Entity	Title	Title 2	First Name 1	Last Name 1	Email	County	Group
Hubbs Sea World			Karen	Terra	kterra@hswri.org	Outside Hawaii	OPIP
		Mr.	Robert	Texeira		Hawai'I County	OPIP
Department of Land and Natural Resources	Chairperson's Office		Honorable Laura	Thielen	Laura.Thielen@hawaii.gov	City & County of Honolulu	Agency
			Heather	Tipon		City & County of Honolulu	
Department of Education	Chairperson		Garrett	Toguchi	Garrett_Toguchi@notes.k12.hi.us	City & County of Honolulu	Agency
			Representative	Tokioka		Kaua'i County	OPIP
Kaho'olawe Island Reserve Commission			Dean	Tokishi	dtokishi@kirc.hawaii.gov	City & County of Honolulu	Agency
			Senator Jill	Tokuda	sentokuda@capitol.hawaii.gov	City & County of Honolulu	Elected/Appointed Officials
NOAA Office of National Marine Sanctuaries Pacific Islands Region			Allen	Tom		City & County of Honolulu	Agency
NOAA			Erik	Tong	eric.tong@noaa.gov	City & County of Honolulu	Agency
NMFS PIRO PRD	Regional Administrator		Michael	Tosatto	michael.tosatto@noaa.gov	City & County of Honolulu	Agency
KAHEA			Marti	Townsend	marti@kahea.org	City & County of Honolulu	NGO & Advocacy Grp
Big Island Fishermen's Association		Mr.	Michael	Trask		Hawai'I County	NGO & Advocacy Grp
Maui Department of Housing and Human Concerns	Director		Lori	Tsuhako	director.hhc@mauicounty.gov	Maui County	Agency
			David	Tsunehiru		Kaua'i County	OPIP
		Senator	Shan	Tsutsui	sentsutsui@capitol.hawaii.gov	Hawai'I County	Elected/Appointed Officials
University of Hawai'i - Hilo Hilo Marine Mammal Response Network		Ms.	Jason	Turner, PhD	jpturner@hawaii.edu	Hawai'I County	OPIP
Department of Environmental Management	Director	Mr.	Lono	Tyson	cohdem@co.hawaii.hi.us	Hawai'I County	Agency
Hawai'i Watchable Wildlife Project (HWWP) HWWP Steering Committee			Ruth	Uemura	rmuemura@yahoo.com	City & County of Honolulu	NGO & Advocacy Grp
			Malie	Unabia Verka		Maui County	OPIP
NMFS PIRO	Assistant Regional Administrator for Protected Resources		Lisa	Van Atta	alecia.vanatta@noaa.gov	City & County of Honolulu	Agency
NOAA PIFSC	NEPA & Permits Coordinator	Mr.	Matthew	Vandersande	matthew.vandersande@noaa.gov		Agency
	Council Member		Michael	Victorino	michael.victorino@mauicounty.us	Maui County	Elected/Appointed Officials
Department of Land and Natural Resources Division of Aquatic Resources, ESA Section 6 Program	Hawai'i Island Sanctuary Programs Coordinator		Justin	Viezbicke	justin.p.viezbicke@hawaii.gov	Hawai'I County	Agency
			Poola	Villarimo		City & County of Honolulu	OPIP
	Senator		Senator Glenn	Wakai	senwakai@capitol.hawaii.gov		
			Duane	Wakutle			
NMFS PIRO PRD	Hawaiian Monk Seal Recovery Coordinator		Jeffrey	Walters, PhD	jeff.walters@noaa.gov	City & County of Honolulu	Agency
Hawai'i Public Information Office			Deborah	Ward		City & County of Honolulu	Agency
			Nappes	Watoya	wataya4@msn.com	Kaua'i County	OPIP
			Trisha Kehau	Watson	watson@honuaconsulting.com	City & County of Honolulu	NGO & Advocacy Grp
		Mrs.	Heide Joy	Weber	heide.weber@yahoo.com	Hawai'I County	OPIP
			Drake	Wells		Maui County	OPIP
			Barry & Mary	Werthwine		Kaua'i County	OPIP
Fire Department	Fire Chief		Robert	Westerman	kfd@kauai.gov	Kaua'i County	Agency
			Lisa	White	lisa.white@hawaiiantel.net	City & County of Honolulu	OPIP
			Reg	White	rawcohi@cs.com	City & County of Honolulu	NGO & Advocacy Grp
		Ms.	Evelyn	Wight	ewight@tnc.org	Hawai'I County	OPIP
Papahānaumokuākea Marine National Monument NOAA National Ocean Service (PMNM)	Superintendent		T. Aulani	Wilhelm	aulani.wilhelm@noaa.gov	City & County of Honolulu	Agency
			Terrie	Williams	williams@biology.ucsc.edu		
University of California - Santa Cruz Marine Mammal Physiology Laboratory			Terrie	Williams, PhD	williams@biology.ucsc.edu	Outside Hawaii	OPIP
EPA	Ms.		Wendy	Wiltse	wiltse.wendy@epa.gov	City & County of Honolulu	Agency
			Anita	Wintner	anitabanana@hawaiiantel.net		
NOAA HIHWNMS	Ops Coordinator	Mr.	Paul	Wong	paul.b.wong@noaa.gov		Agency
Individual			Chris	Woolaway	chris@woolaway.com	City & County of Honolulu	OPIP
			Tracy	Wurth	twurth@gmail.com	City & County of Honolulu	OPIP
NMFS PIFSC PSD Hawaiian Monk Seal Research Program	Monk Seal Biological Technician		Tracy	Wurth	tracy.wurth@noaa.gov	City & County of Honolulu	Agency

Entity	Title	Title 2	First Name 1	Last Name 1	Email	County	Group
Police Department	Chief of Police		Gary	Yabuta	crs@mpd.net	Maui County	Agency
		Mr.	Dominic	Yagong	dyagong@co.hawaii.hi.us	Hawai'I County	Elected/Appointed Officials
			James	Yamamoto		Kaua'i County	OPIP
NOAA			Naomi	Yamamoto	naomi.yamamoto@noaa.gov	City & County of Honolulu	Agency
			Clay	Yamauces		Kaua'i County	OPIP
Division of State Parks			Martha	Yent		City & County of Honolulu	Agency
			Lance	Ymatsumoto		Kaua'i County	OPIP
	Chair	Mr.	J.	Yoshimoto	jyoshimoto@co.hawaii.hi.us	Hawai'I County	Elected/Appointed Officials
U.S. Army Corps of Engineers	Chief, Regulatory Branch	Mr.	George	Young, P.E.			Elected/Appointed Officials
Conservation Council for Hawai'i			Marjorie	Ziegler	info@conservehi.org	City & County of Honolulu	NGO & Advocacy Grp
			Derek			Kaua'i County	OPIP
			Sean				
			Timothy			Kaua'i County	OPIP
KAHEA					kahea-alliance@hawaii.rr.com	City & County of Honolulu	NGO & Advocacy Grp
	County Council Member						
			No Name		bk1492@aol.com		OPIP
			No Name2		kale@moolelo.com		OPIP
			No Name3		kale@spamarrest.com		OPIP
			No Name4		tonyd.32383@gmail.com		
Hawai'i Chamber of Commerce					acheng@cochawaii.org	City & County of Honolulu	OPIP
Hawaii Island Chamber of Commerce					admin@hicc.biz	Hawai'I County	OPIP
Honolulu Community College					admissions@hcc.hawaii.edu	Media	OPIP
UH at West O'ahu					admissions@uhwo.hawaii.edu	Media	OPIP
Hawai'i Pacific University Hawai'i Loa Campus					advising@hpu.edu	City & County of Honolulu	OPIP
US Federal Aviation Administration					airoahu@hawaii.gov	City & County of Honolulu	Agency
Kaua'i Community College Library					arkauai@hawaii.edu	Media	OPIP
Animal Welfare Insitute					awi@awionline.org	Outside Hawaii	NGO & Advocacy Grp
Hawai'i Chamber of Commerce					brynas@cochawaii.org	City & County of Honolulu	OPIP
Center for Biological Diversity					center@biologicaldiversity.org	Outside Hawaii	NGO & Advocacy Grp
Hawai'i Chamber of Commerce					charles@cochawaii.org	City & County of Honolulu	OPIP
Maui News	Editorial Department				citydesk@mauinews.com	Media	OPIP
Hawai'i Tribune Herald	Classified				classified@hawaiitribune-herald.com	Media	OPIP
Office of County Clerk Council Services					cokcouncil@kauai.gov	Kaua'i County	Elected/Appointed Officials
Hawai'i Pacific University College of Natural and Computational Sciences					conatsci@hpu.edu	City & County of Honolulu	OPIP
Board of Water Supply					contactUs@hbws.org	City & County of Honolulu	Agency
Hawai'i Chamber of Commerce					crobbins@cochawaii.org	City & County of Honolulu	OPIP
Defenders of Wildlife					defenders@mail.defenders.org	Outside Hawaii	NGO & Advocacy Grp
Department of Land and Natural Resources Division of Conservation and Resources Enforcement					dlnr@hawaii.gov	City & County of Honolulu	Agency
Maui Office of Economic Development					economic.development@mauicounty.gov	Maui County	Agency
Monachus Guardian					editor@monachus-guardian.org	City & County of Honolulu	NGO & Advocacy Grp
Hawai'i Chamber of Commerce					gwalker@cochawaii.org	City & County of Honolulu	OPIP
Hawaii Ocean Users					hawaiioceanusers@gmail.com	Kaua'i County	OPIP
Northwestern Hawaiian Islands Marine National Monument					hawaiireef@noaa.gov	City & County of Honolulu	Agency
Papahānaumokuākea Marine National Monument NOAA Sanctuaries					hawaiireef@noaa.gov	City & County of Honolulu	Agency
Papahānaumokuākea Marine National Monument NOAA Sanctuaries					hawaiireef@noaa.gov	City & County of Honolulu	Agency
Hawaii Community College					hawccinf@hawaii.edu	Media	OPIP
Hawaiian Islands Humpback Whale National Marine Sanctuary					hihumpbackwhale@noaa.gov	Maui County	Agency
Hawai'i Chamber of Commerce					info@cochawaii.org	City & County of Honolulu	OPIP

Entity	Title	Title 2	First Name 1	Last Name 1	Email	County	Group
International Fund for Animal Welfare					info@ifaw.org	Outside Hawaii	NGO & Advocacy Grp
Kauai Chamber of Commerce					info@kauaichamber.org	Kaua'i County	OPIP
Maui Chamber of Commerce					info@mauichamber.com	Mauai County	OPIP
Department of Environmental Services					iwalanis5@gmail.com	City & County of Honolulu	Agency
Hawai'i Chamber of Commerce					jtollefson@cochawaii.org	City & County of Honolulu	OPIP
Hawai'i Chamber of Commerce					judy@cochawaii.org	City & County of Honolulu	OPIP
Kapi´olani Community College					kapinfo@hawaii.edu	Media	OPIP
Kaua'i Monk Seal Watch Program					kauaimonkseal@gmail.com	Kaua'i County	NGO & Advocacy Grp
Hawai'i Chamber of Commerce					khouston-sur@cochawaii.org	City & County of Honolulu	OPIP
Hawai'i Chamber of Commerce					kokamura@cochawaii.org	City & County of Honolulu	OPIP
Natural Energy Lab Hawai'I (NELHA)					leasing@nelha.org	Hawai'I County	Agency
Leeward Community College					leeward@hawaii.edu	Media	OPIP
Municipal Library, Hololulu					library@honolulu.gov	Media	OPIP
Hawai'i Chamber of Commerce					mbeams@cochawaii.org	City & County of Honolulu	OPIP
Maui Community College Library					mcclib@hawaii.edu	Media	OPIP
Public Information Office					mdaubert@kauai.gov	Kaua'i County	Agency
Humane Society of the US					membership@hsus.org		NGO & Advocacy Grp
Humane Society					membership@humanesociety.org	Outside Hawaii	NGO & Advocacy Grp
Ocean Conservancy					membership@oceanconservancy.org	Outside Hawaii	NGO & Advocacy Grp
Hawai'i Chamber of Commerce					mlau@cochawaii.org	City & County of Honolulu	OPIP
Molokai Chamber of Commerce					molokaichamber@hawaiiantel.biz	Mauai County	OPIP
UH Hilo Mookini Library					mookini@hawaii.edu	Media	OPIP
Hawai'i Watchable Wildlife Project (HWWP)					mz@conservehi.org	City & County of Honolulu	NGO & Advocacy Grp
Kauai County Department of Planning	Director				n/a	Kaua'i County	Agency
Kauai County Water Department	Manager & Chief Engineer				n/a	Kaua'i County	Agency
NOAA's National Ocean Service					nos.info@noaa.gov	City & County of Honolulu	Agency
The Monk Seal Project					pem2134@gmail.com	Media	OPIP
Maui County					postmaster@mauicounty.us		Elected/Appointed Officials
NOAA National Marine Sanctuary Program					sanctuaries@noaa.gov	Outside Hawaii	Agency
Hawai'i Chamber of Commerce					smenor-mcnamara@cochawaii.org	City & County of Honolulu	OPIP
Department of Transportation					thekauaibus@kauai.gov	Kaua'i County	Agency
Windward Community College					wccinfo@hawaii.edu	Media	OPIP
Agency on Elderly Affairs						Kaua'i County	Agency
Department of Design and Construction	Director					City & County of Honolulu	Agency
Department of Environmental Services	Director					City & County of Honolulu	Agency
Office of Hawaiian Affairs						Hawai'I County	Agency
Papahānaumokuakea Marine National Monument State of Hawai'i - DLNR						City & County of Honolulu	Agency
State of Hawaii Public Works Division						City & County of Honolulu	Agency
US Coast Guard	Commander					City & County of Honolulu	Agency
US Fish and Wildlife Service Refuge/Monument Division						City & County of Honolulu	Agency
US Naval Base, Pearl Harbor						City & County of Honolulu	Agency
Port Allen Fishing Club						Kaua'i County	NGO & Advocacy Grp
Hawai'i Institute of Marine Biology						City & County of Honolulu	OPIP
Hilo Casting Club						Hawai'I County	OPIP
Maui Visitors Bureau						Mauai County	OPIP
Sea Life Park by Dolphin Discovery						City & County of Honolulu	OPIP
State Main Library						Media	OPIP
United Fishing Agency						City & County of Honolulu	OPIP
Wai'anae Boat Fishing Club						City & County of Honolulu	OPIP

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Attachment C
Project Newsletter and Comment Form

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Pacific Islands Region

Hawaiian Monk Seal PEIS

October 2010
Newsletter #1

NOAA FISHERIES SERVICE

Inside This Issue

Hawaiian Monk Seal Recovery Actions

Programmatic Environmental Impact Statement

This newsletter is the first in a series of four newsletters regarding the Hawaiian Monk Seal Recovery Actions Programmatic Environmental Impact Statement (PEIS). It is being mailed to federal, state, and local agencies; elected and appointed officials; Native Hawaiian groups; other interested organizations; and individual citizens within or adjacent to the project area to inform people about the National Environmental Policy Act (NEPA) process and to request scoping comments. This and subsequent newsletters can be found on the project website: http://www.nmfs.noaa.gov/pr/permits/eis/hawaiianmonkseal.htm. The purpose of this newsletter is to invite you to participate in the public scoping comment process and provide some background information on the Hawaiian Monk Seal Recovery Actions PEIS.

Scoping Meetings Announced

The National Marine Fisheries Service (NMFS) Pacific Islands Regional Office is preparing a PEIS to assess the impacts of implementing specific management actions and administering a research and enhancement program to improve survival of Hawaiian monk seals *(Monachus schauinslandi)* in the Northwestern and Main Hawaiian Islands.

Publication of the Notice of Intent was published in the *Federal Register* on October 1, 2010, which began the official 45-day scoping period for this PEIS. Scoping is a part of the NEPA process that invites affected and interested people, agencies, and groups to help:

- identify concerns about the proposed action;
- define a range of alternatives;
- determine and define the scope of issues to be examined;
- identify other environmental and consultation requirements;
- identify related environmental documents being prepared; and
- identify potentially interested parties.

The scoping comment deadline is November 15, 2010.

In the News

What is NEPA?

NEPA requires federal agencies (such as NMFS) to consider and disclose the potential consequences of its decisions on the human environment before deciding to proceed with a proposed action.

A range of reasonable alternatives, including an alternative considering no action as required by NEPA, will be developed and analyzed in the PEIS. The alternatives must address the requirements of NEPA as well as the legal, regulatory, and budgetary parameters that govern the research and enhancement (for example, the Endangered Species Act [ESA]). Through scoping and subsequent discussions, the public will assist in developing the alternatives to be addressed in the PEIS process.

The potential impacts of the alternatives will be assessed and the results of the analyses will be documented in the Draft PEIS, which the public will have an opportunity to review. Comments on the Draft PEIS received from agencies and the public will be considered and incorporated, as applicable, into the Final PEIS.

During preparation of this PEIS, the public and interested groups and agencies will have an opportunity to:

- understand the requirements for NEPA compliance;
- make recommendations on how recovery activities should be conducted; and
- review decision-making options for management, research and enhancement by NMFS.

The PEIS process is scheduled for completion in late 2011.

Why is a PEIS needed?

The intent of this PEIS is to evaluate, in compliance with NEPA, the potential direct, indirect, and cumulative impacts on the human environment of the proposed activities under the Hawaiian monk seal recovery program.

Steps in the NEPA Process

- Notice of Intent (NOI) to Prepare a PEIS
- We are here → *Scoping
- Alternatives Analysis
- *Draft PEIS Issued
  Available for 60-day Public Review
- *Public Hearing on Draft PEIS
- Public Comment Review and Synthesis
- Response to Comments/Prepare Final PEIS
- Selection of Preferred Alternatives
- *Final PEIS Issued
  Available for Minimum 30-day Public Review
- *Record of Decision
  Public Statements of Agency Decisions

*indicates steps where there is an opportunity to provide public input

Project Description

NMFS is the federal agency responsible for management of Hawaiian monk seals under the ESA and the Marine Mammal Protection Act (MMPA). NMFS currently funds, authorizes, and conducts research and enhancement activities on Hawaiian monk seals in the Northwestern Hawaiian Islands and Main Hawaiian Islands. In 1976, NMFS listed Hawaiian monk seals as "endangered" under the ESA and "depleted" under the MMPA. A Recovery Plan was developed by NMFS for the species in 1983 and revised in 2007. Under this plan, there are funds designated and allocated to NMFS for the purpose of promoting Hawaiian monk seal recovery. NMFS administers these funds, issues permits, and implements recovery actions that include research and enhancement activities (for example, population counts, tagging, and tissue sampling).

Public Scoping Meeting Schedule

Honolulu, O'ahu
Wednesday, October 20, 2010; 5:30 pm - 8:30 pm

Central Union Church
1660 South Beretainia St.

Hilo, Hawai'i
Thursday, October 21, 2010; 6 pm - 9 pm

Mokupāpapa Discovery Center
308 Kamehamela Ave., Ste 109

Kīhei, Maui
Monday, October 25, 2010; 6 pm - 9 pm

NOAA Sanctuaries New Community Learning Center
726 South Kihei Rd.

Kaunakakai, Moloka'i
Tuesday, October 26, 2010; 6 pm - 9 pm

Hale Mahaolu Home Pumehana
290 Kolapa Pl.

Līhu'e, Kaua'i
Wednesday, October 27, 2010; 6 pm - 9 pm

Wilcox Elementary School
4319 Hardy St.

Purpose and Need for Management Actions and Research and Enhancement Activities

The purpose of this proposed action is to assure the long-term viability of the Hawaiian monk seals in the wild, allowing initially for reclassification to threatened status and, ultimately, removal from the List of Endangered and Threatened Wildlife under the ESA. The Hawaiian monk seal population has experienced a prolonged decline and currently only approximately 1,200 monk seals remain.

Numerous threats to the survival of Hawaiian monk seals are identified in the 2007 Hawaiian Monk Seal Recovery Plan. In the Northwestern Hawaiian Islands, young seals are starving, pups are being killed by sharks, seals are getting entangled in marine debris, and sea level rise threatens terrestrial habitats. Low juvenile survival over the past two decades is the primary cause of the population's decline, and the population decline will likely continue without intervention. Enhancement activities, including but not limited to translocating seals from areas of lower to higher survival, are being considered to improve juvenile survival and the overall health of the population.

A comprehensive research program enables NMFS to recognize, and possibly quantify, factors limiting the population in order to designate appropriate actions to minimize impacts of human-induced activities and other factors affecting Hawaiian monk seal survival. Data and analyses derived from research lead to improved decision-making, and strategic management and enhancement activities that promote population recovery, prevent harm and avoid jeopardy or continued disadvantage to the species. Research and monitoring will continue to play a key role in determining whether enhancement activities achieve their desired outcomes.

How can I participate in the process?

Public Scoping Meetings

There are several opportunities to participate in the PEIS process. Five public scoping meetings will be held to present information to the public and obtain input. Dates for the public scoping meetings are provided in this newsletter and will be announced in newspapers and the project website at http://www.nmfs.noaa.gov/pr/permits/eis/hawaiianmonkseal.htm.

There will be an open house for the first 30 minutes of each meeting followed with a presentation to describe the project and process. An opportunity for questions, answers, and oral comments will be given after the presentation.

The public scoping comment period will be open until November 15, 2010. Comments may be submitted at the public scoping meetings verbally and/or in writing, or outside of the public scoping meetings by e-mail, fax, or by letter to the address provided at the end of this newsletter.

Your comments are important to us; particularly at this early stage of the process.

Other Ways to Participate

The pre-addressed comment form accompanying this newsletter can be used to submit written comments at any time during the scoping period. Comments received from the public during scooping will be reviewed and incorporated, as applicable, in the PEIS.

Once the Draft PEIS is complete, the document will be released to the public to review for a period of 60 days. During the review period, NMFS will conduct public hearings to accept comments on the Draft PEIS document. Public testimony and written or e-mailed comments will be accepted during this period.

NMFS will maintain a mailing list throughout the process. Newsletters will be distributed to those on the mailing list. If you need additional information about the project, have any questions, or are interested in being added to or removed from the project mailing list please contact Jeff Walters, the NMFS Project Manager for the PEIS by mail or e-mail listed below. Please submit your written comments regarding the PEIS to:

National Marine Fisheries Service
Pacific Islands Regional Office
Hawaiian Monk Seal Recovery Actions PEIS
1601 Kapiolani Blvd., Ste. 1110
Honolulu, HI 96814
e-mail: monkseal@noaa.gov
website: http://www.nmfs.noaa.gov/pr/permits/eis/hawaiianmonkseal.htm

In 2009, 113 seals were individually identified in the main Hawaiian Islands, based on flipper tag ID numbers or unique natural markings. Including seals that have not been individually identifed, NMFS researchers estimate the total number of monk seals in the main Hawaiian Islands is at least 150.

Where do monk seals go to find food?

Monk seals hunt for food outside the immediate shoreline areas, primarily in the region that is 60-300 feet deep. If fishermen are throw-netting or shore-casting, they will likely not be fishing in the area where the monk seals feed. However, monk seals and fishermen do, on rare occasion, use the same areas. This usually happens along the shoreline as seals leave to or return from feeding. Seals have also been known to eat catch from nets, and bait from fishing hooks. When this happens the seals can become a nuisance. Seals may eat fish and bait because they are "opportunistic feeder." This means that they will feed on a food source if it is "easy" for them to get. They learn these habits quickly. Ultimately this behavior is bad for both seals and fishermen.

For more information on Hawaiian monk seals, including recommendations to reduce monk seal interactions with fishing gear, please view the FAQ sheet titled "FAQ: How to prevent seals from getting your fish and bait," available for download at the following website: http://www.fpir.noaa.gov/PRD/prd_hawaiian_monk_seal.html.

Photos taken under ESA-MMPA Permit 932-1905

Comment Form

Your input is an important part of this project. To help us incorporate your views, ideas, and suggestions, please provide your comments below and mail to the address preprinted on the back of this page. Comments can also be submitted via email at monkseal@noaa.gov. Please type or write legibly (printing is appreciated). You may attach additional sheets if necessary.

If you have any questions please contact Jeff Walters, the NMFS Project Manager for this PEIS at monkseal@noaa.gov or 1601 Kapiolani Blvd., Ste. 1110, Honolulu, HI 96814.

Contact Information (optional)

Name (please print): _____

Address: _____

City, State, Zip Code: _____

Telephone: _____

E-Mail: _____

Your Comments:

NOAA FISHERIES SERVICE

Science, Service, Stewardship

Place Stamp Here

National Marine Fisheries Service
Pacific Islands Regional Office
Hawaiian Monk Seal Recovery Actions PEIS
1601 Kapiolani Blvd., Ste. 1110
Honolulu, HI 96814

NOAA Fisheries Service, Pacific Islands Regional Office
www.fpir.noaa.gov

NOAA Fisheries Service, Pacific Islands Fisheries Science Center
www.pifsc.noaa.gov

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Name (please print): _____

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City, State, Zip Code: _____

Telephone: _____

E-Mail: _____

Your Comments:

NOAA FISHERIES SERVICE

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National Marine Fisheries Service
Pacific Islands Regional Office
Hawaiian Monk Seal Recovery Actions PEIS
1601 Kapiolani Blvd., Ste. 1110
Honolulu, HI 96814

NOAA Fisheries Service, Pacific Islands Regional Office
www.fpir.noaa.gov

NOAA Fisheries Service, Pacific Islands Fisheries Science Center
www.pifsc.noaa.gov

Attachment D
Public Scoping Meeting Notices

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AFFIDAVIT OF PUBLICATION

IN THE MATTER OF
National Marine Fisheries Service
Notice of Public Scoping Meetings
Programmatic Environmental Impact Statement
for Hawaiian Monk Seal Recovery Actions

STATE OF HAWAII }
} SS.
City and County of Honolulu }

Doc. Date: 10/21/10 **# Pages:** 1
Notary Name: COLLEEN E. SORANAKA First Judicial Circuit
Doc. Description: Affidavit of Publication

10/21/10
Notary Signature Date

COLLEEN E. SORANAKA ★ NOTARY PUBLIC (Stamp or Seal) No. 90-263 ★ STATE OF HAWAII

Theresa Oyama being duly sworn, deposes and says that she is a clerk, duly authorized to execute this affidavit of Oahu Publications, Inc. publisher of The Honolulu Star-Advertiser and MidWeek, that said newspapers are newspapers of general circulation in the State of Hawaii, and that the attached notice is true notice as was published in the aforementioned newspapers as follows:

Honolulu Star-Advertiser 2 times on:
10/06, 10/13/2010

Midweek Wed. 1 times on:
10/13/2010

Midweek Kauai 2 times on:
10/13, 10/20/10

And that affiant is not a party to or in any way interested in the above entitled matter.

Theresa Oyama

Subscribed to and sworn before me this 21 day of Oct. A.D. 20 10

Colleen E. Soranaka, Notary Public of the First Judicial Circuit, State of Hawaii

My commission expires: Jan 06 2012

COLLEEN E. SORANAKA ★ NOTARY PUBLIC No. 90-263 ★ STATE OF HAWAII

Ad # 0000243381 LN:_____

National Marine Fisheries Service
Notice of Public Scoping Meetings
Programmatic Environmental Impact Statement for Hawaiian Monk Seal Recovery Actions

NOAA's National Marine Fisheries Service (NMFS), Pacific Islands Regional Office is proposing to implement specific management actions and administer the associated research and enhancement program for Hawaiian monk seals in the Hawaiian Islands. The public scoping meetings provide an opportunity to express your views and identify issues to be addressed in the Programmatic Environmental Impact Statement (PEIS). In accordance with the National Environmental Policy Act (NEPA), NMFS requests any comments you may have about potential management actions and associated research and enhancement program activities that may be performed on Hawaiian monk seals in an effort to recover the species. Five public scoping meetings will be held in the following locations (the first 30 minutes will be an open house):

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290 Kolapa Place
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4319 Hardy Street
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The Notice of Intent was published in the *Federal Register* on October 1, 2010 and a link to it can be found on the project website at: **http://www.nmfs.noaa.gov/pr/permits/eis/hawaiianmonkseal.htm.** Scoping comments can be submitted in writing and mailed to NMFS Pacific Islands Regional Office, Hawaiian Monk Seal Recovery Actions PEIS at 1601 Kapiolani Blvd., Suite 1110, Honolulu, HI 96814 or e-mailed to **monkseal@noaa.gov.**

THE DEADLINE FOR PROVIDING COMMENTS IS NOVEMBER 15, 2010.
(SA243381 10/6, 10/13/10 MW 10/13/10, MWK 10/13, 10/20/10)

AFFIDAVIT OF PUBLICATION

State of Hawaii)

) SS:

County of Hawaii)

LEILANI K. R. HIGAKI, being first duly sworn, deposes and says:

1. That she is the BUSINESS MANAGER of HAWAII TRIBUNE-HERALD, a newspaper published in the City of HILO, State of Hawaii.

2. That the "National Marine Fisheries Service - Notice of Public Scoping Meetings Programmatic Environmental Impact Statement for Hawaiian Monk Seal Recovery Actions -etc.,".

of which a clipping from the newspaper as published is attached hereto, was published in said newspaper on the following date(s) October 7, 14, 2010, (etc.).

(24243r1

Leilani K R Higaki

Subscribed and sworn to before me

this 25th day of October, 2010.

S H P O

SHARON H. P. OGATA

Notary Public, Third Circuit, State of Hawaii

My commission expires October 1, 2012

Page(s): 1

National Marine Fisheries Service
Notice of Public Scoping Meetings
Programmatic Environmental Impact Statement for Hawaiian Monk Seal Recovery Actions

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THE DEADLINE FOR PROVIDING COMMENTS IS NOVEMBER 15, 2010.

(24243r1 Hawaii Tribune-Herald: October 7, 14, 2010)

AFFIDAVIT OF PUBLICATION

STATE OF HAWAII, }
County of Maui. } ss.

Rhonda M. Kurohara being duly sworn deposes and says,that she is in Advertising Sales of the Maui Publishing Co., Ltd., publishers of THE MAUI NEWS, a newspaper published in Wailuku, County of Maui, State of Hawaii; that the ordered publication as to

National Marine Fisheries Service

Notice of Public Scoping Meetings

of which the annexed is a true and correct printed notice, was published 1 times in THE MAUI NEWS, aforesaid, commencing on the 11th day of October, 2010, and ending on the 18th day of October, 2010, (both days inclusive), to-wit: on

October 11, 18, 2010

and that affiant is not a party to or in any way interested in the above entitled matter.

This 1 page Notice of Public Scoping, dated October 11, 18, 2010, was subscribed and sworn to before me this 18th day of October, 2010, in the Second Circuit of the State of Hawaii, by Rhonda M. Kurohara

Notary Public, Second Judicial Circuit, State of Hawaii

BETTY E. UEHARA
My commission expires 09-26-11

BETTY E. UEHARA NOTARY PUBLIC No. 83-344 STATE OF HAWAII

National Marine Fisheri
Notice of Public Scoping
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Hawaiian Monk Seal Recovery Actions PE
Blvd., Suite 1110, Honolulu, HI 968
monkseal@noaa.gov.

THE DEADLINE FOR PROVIDING
NOVEMBER 15, 2010.
(MN: Oct. 11, 18, 2010)

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Hiki No. After a half-hour or so of trolling, I look back to see a good sized Mahi doing its dance, and Kamauliola is cheering as he watches it go airborne. The fish turned out to be a stubborn one and did all its tricks, including jumping over ten times and also going down deep. I just took my time and tired it out so it wouldn't go ballistic when it got in the boat. After getting the fish all iced down in the fishbag, he said "we got fish, let's go already." This Bull Mahimahi weighed in at 31.5 lbs!

National Marine Fisheries Service

Notice of Public Scoping Meetings
Programmatic Environmental Impact Statement for Hawaiian Monk Seal Recovery Actions

NOAA's National Marine Fisheries Service (NMFS), Pacific Islands Regional Office is proposing to implement specific management actions and administer the associated research and enhancement program for Hawaiian monk seals in the Hawaiian Islands. The public scoping meetings provide an opportunity to express your views and identify issues to be addressed in the Programmatic Environmental Impact Statement (PEIS). In accordance with the National Environmental Policy Act (NEPA), NMFS requests any comments you may have about potential management actions and associated research and enhancement program activities that may be performed on Hawaiian monk seals in an effort to recover the species. Five public scoping meetings will be held in the following locations (the first 30 minutes will be an open house):

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THE DEADLINE FOR PROVIDING COMMENTS IS NOVEMBER 15, 2010.

Molokai Dispatch
Molokai news, Molokai Style Since 1985

To Whom It May Concern:,

I, Kathleen Templeton, certify that the advertisements for ERM, listed under National Marine Fisheries Service, were placed in The Moloka'i Dispatch on Oct 13 & 20, 2010 as 1/5 page black & white ads. Please reference the tear sheets as proof of publication and the attached receipt #3450 for more information.

If there are any questions or concerns please feel free to contact our Sales Manager at 808.450.6218.

Sincerely,

Kathleen Templeton

Kathleen Templeton

Subscribed and sworn to before me this

2 day of Dec, 2010

April L.M. Kealoha

Notary Public, Second Judicial Circuit
State of Hawaii

Commission Expires 11-9-13

APRIL L.M. KEALOHA NOTARY PUBLIC 92-765 STATE OF HAWAII

Doc Date: 12-2-10 # Pages: 1
Name: 2nd Circuit
Doc. Description: Affidavit

Signature 12-2-10 Date

NOTARY CERTIFICATION

Molokai Dispatch
P.O. Box 482219, Kaunakakai, HI 96748 | P: 808-552-2781 | F: 808-552-2334
www.TheMolokaiDispatch.com |sales@ TheMolokaiDispatch.com

STATE OF HAWAII
COUNTY OF KAUAI
AFFIDAVIT OF PUBLICATION

THE GARDEN ISLAND

ENVIRONMENTAL RESOURCES MGMNT
341 WEST TUDOR ROAD STE 206
ANCHORAGE AK 99503

REFERENCE: 200660
726063 HAWAIIAN MONK SEAL RECOVERY

Kaylen Manoi, being duly sworn, deposes and says, that she is an employee of "The Garden Island," a newspaper published in Lihue, County of Kauai, State of Hawaii; that the NOTICE in the above entitled matter of which the annexed is a true and correct copy, was published 2 time(s) in "The Garden Island" aforesaid and that this affiant is not a party to or in any way interested in the above entitled matter.

Kaylen Manoi

Subscribed and sworn to me this 3 day of Nov., 2010.

CATHERINE VALENCIA
Notary Public, Fifth Judicial Ciruit
State of Hawaii
My Commission Expires: 10.3.2012

Document Description: Affidavit of Publication
No. of pages: 1 Document Date: 11.3.2010

PUBLISHED ON: 10/13/2010 10/20/2010

FILED ON: KM 10/20/10

CATHERINE VALENCIA NOTARY PUBLIC No. 04-580 STATE OF HAWAII

National Marine Fisheries Service
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(October 13 & 20, 2010)

AFFIDAVIT OF PUBLICATION

STATE OF HAWAII, }
County of Maui. } ss.

Rhonda M. Kurohara being duly sworn deposes and says,that she is in Advertising Sales of the Maui Publishing Co., Ltd., publishers of THE MAUI NEWS, a newspaper published in Wailuku, County of Maui, State of Hawaii; that the ordered publication as to

National Marine Fisheries Service

Extension of Scoping Comment Period

of which the annexed is a true and correct printed notice, was published 2 times in THE MAUI NEWS, aforesaid, commencing on the 12th day of November, 2010, and ending on the 19th day of November, 2010, (both days inclusive), to-wit: on

November 12, 19, 2010

and that affiant is not a party to or in any way interested in the above entitled matter.

This 1 page National Marine Fisheries, dated November 12, 19, 2010, was subscribed and sworn to before me this 22nd day of November, 2010, in the Second Circuit of the State of Hawaii, by Rhonda M. Kurohara

Notary Public, Second Judicial Circuit, State of Hawaii

BETTY E. UEHARA
My commission expires 09-26-11

BETTY E. UEHARA NOTARY PUBLIC No. 83-344 STATE OF HAWAII

National Marine Fisheries Service Extension of Scoping Comment Period Programmatic Environmental Impact Statement for Hawaiian Monk Seal Recovery Actions

The National Oceanic Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), Pacific Islands Regional Office (PIRO) is proposing to implement specific management actions and administer the associated research and enhancement program for Hawaiian monk seals in the Hawaiian Islands. Public comments were due by November 15, 2010. NMFS has decided to allow additional time for submission of public comments on this action. **The scoping period for the PEIS is extended to November 30, 2010. Written comments must be received or postmarked by November 30, 2010.**

The Scoping period provides an opportunity to express your views and identify issues to be addressed in the Programmatic Environmental Impact Statement (PEIS). In accordance with the National Environmental Policy Act (NEPA), NMFS requests any comments you may have about potential management actions and associated research and enhancement program activities that may be performed on Hawaiian monk seals in an effort to recover the species.

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(MN: Nov. 12, 19, 2010)

STATE OF HAWAII
COUNTY OF KAUAI
AFFIDAVIT OF PUBLICATION

THE GARDEN ISLAND

ENVIRONMENTAL RESOURCES MGMNT
341 WEST TUDOR ROAD STE 206
ANCHORAGE AK 99503

REFERENCE: 200660
727813 HAWAIIAN MONK SEAL RECOVERY

Kaylen Manoi, being duly sworn, deposes and says, that she is an employee of "The Garden Island," a newspaper published in Lihue, County of Kauai, State of Hawaii; that the NOTICE in the above entitled matter of which the annexed is a true and correct copy, was published 2 time(s) in "The Garden Island" aforesaid and that this affiant is not a party to or in any way interested in the above entitled matter.

Kaylen Manoi

Subscribed and sworn to me this 2 day of Dec., 2010.

Kristine K. Frey

Notary Public, Fifth Judicial Ciruit
State of Hawaii
My Commission Expires: 5/26/2011

Document Description: Affidavit of Publication
No. of pages: 1 Document Date: 12/02/10

PUBLISHED ON: 11/12/2010 11/19/2010

KRISTINE K. FREY NOTARY PUBLIC No. 93-273 STATE OF HAWAII

FILED ON: ~~11/19/10~~ KKF

National Marine Fisheries Service
Extension of Scoping Comment Period
Programmatic Environmental Impact Statement for Hawaiian Monk Seal Recovery Actions

The National Oceanic Atmospheric Administration (NOAA), National Marine Fisheries Service (NMFS), Pacific Islands Regional Office (PIRO) is proposing to implement specific management actions and administer the associated research and enhancement program for Hawaiian monk seals in the Hawaiian Islands. Public comments were due by November 15, 2010. NMFS has decided to allow additional time for submission of public comments on this action. **The scoping period for the PEIS is extended to November 30, 2010. Written comments must be received or postmarked by November 30, 2010.**

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(November 12 & 19, 2010)

AFFIDAVIT OF PUBLICATION

State of Hawaii)

) SS:

County of Hawaii)

LEILANI K. R. HIGAKI, being first duly sworn, deposes and says:

1. That she is the BUSINESS MANAGER of HAWAII TRIBUNE-HERALD, a newspaper published in the City of HILO, State of Hawaii.

2. That the " National Marine Fisheries Service...for Hawaiian Monk Seal Recovery Actions...etc., ".

of which a clipping from the newspaper as published is attached hereto, was published in said newspaper on the following date(s) November 12, 19, 2010, (etc.).

25524r1

Leilani K R Higaki

Subscribed and sworn to before me

this 1st day of December, 2010.

Sharon H. P. Ogata

SHARON H. P. OGATA

Notary Public, Third Circuit, State of Hawaii

My commission expires October 1, 2012

Page(s): 1

National Marine Fisheries Service
Extension of Scoping Comment Period
Programmatic Environmental Impact Statement for Hawaiian Monk Seal Recovery Actions

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(25524r1 Hawaii Tribune-Herald: November 12, 19, 2010)

National Marine Fisheries Service
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Programmatic Environmental Impact Statement for Hawaiian Monk Seal Recovery Actions

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(25524r1 Hawaii Tribune-Herald: November 12, 19, 2010)

AFFIDAVIT OF PUBLICATION

IN THE MATTER OF
National Marine Fisheries Service

STATE OF HAWAII }
} SS.
City and County of Honolulu }

Doc. Date: NOV 2 4 2010 **# Pages:** 1

Notary Name: Patricia K. Reese First Judicial **Circuit**

Doc. Description: Affidavit of Publication

Patricia K. Reese NOV 2 4 2010
Notary Signature Date

PATRICIA K. REESE NOTARY PUBLIC (Seal) Comm. No. 86-467 STATE OF HAWAII

Theresa Oyama being duly sworn, deposes and says that she is a clerk, duly authorized to execute this affidavit of Oahu Publications, Inc. publisher of The Honolulu Star-Advertiser and MidWeek, that said newspapers are newspapers of general circulation in the State of Hawaii, and that the attached notice is true notice as was published in the aforementioned newspapers as follows:

Honolulu Star-Advertiser 2 times on:
11/12, 11/19/2010

Midweek Wed. 2 times on:
11/17, 11/24/2010

Midweek Kauai 2 times on:
11/17, 11/24/2010

And that affiant is not a party to or in any way interested in the above entitled matter.

Theresa Oyama

Subscribed to and sworn before me this 24th day
of Nov. A.D. 20 10

Patricia K. Reese, Notary Public of the First Judicial Circuit, State of Hawaii

My commission expires: Oct 07 2014

PATRICIA K. REESE NOTARY PUBLIC Comm. No. 86-467 STATE OF HAWAII

National Marine Fisheries Service
Extension of Scoping Comment Period
Programmatic Environmental Impact Statement for Hawaiian Monk Seal Recovery Actions

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(SA254675 11/12, 11/19/10 MW 11/17, 11/24/10, MWK 11/17, 11/24/10)

Ad # 0000254675 LN:_____

Molokai Dispatch
Molokai news, Molokai Style Since 1985

To Whom It May Concern:,

I, Kathleen Templeton, certify that the advertisements for ERM, listed under National Marine Fisheries Service, were placed in The Moloka'i Dispatch on Nov 17 & 24, 2010 as 1/8 page black & white ads. Please reference the tear sheets as proof of publication and the attached receipt #3545 for more information.

If there are any questions or concerns please feel free to contact our Sales Manager at 808.450.6218.

Sincerely,

Kathleen Templeton

Kathleen Templeton

Subscribed and sworn to before me this

16 day of Dec., 2010

April L.M. Kealoha

Notary Public, Second Judicial Circuit
State of Hawaii

Commission Expires 11-9-2012

APRIL L.M. KEALOHA NOTARY 92-765 PUBLIC STATE OF HAWAII

Doc Date: 12-16-10 # Pages: 1
Name: April L.M. Kealoha 2nd Circuit
Doc. Description: Affidavit
Signature 12-16-10 Date
NOTARY CERTIFICATION

Molokai Dispatch
P.O. Box 482219, Kaunakakai, HI 96748 | P: 808-552-2781 | F: 808-552-2334
www.TheMolokaiDispatch.com |sales@ TheMolokaiDispatch.com

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Attachment E
Public Scoping Meeting Sign-in Sheets & MeetingPacket

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Sign-In Sheet – Honolulu, O'ahu

October 20, 2010
Central Union Church

Name	Address	Email	Would you like to make verbal comments tonight?
Kelly Jean Evans	P.O. Box 1004 Waialua, HI 96791	kellyinparadise@hotmail.com	
Tracy Wurth	630 HAO ST HONOLULU, HI 96821	~~trac~~ twurth@gmail.com	
Jean Higgins		jeanhiggins@noaa.gov	
Barbara + Robert Billard	87-122 Linakola St waianae HI	whalewatcher03@hotmail.com	
Dana Jones	87-126 Helelua St. D302	WOALWAHINE@gmail.com	
Diane Gabriel	45-~~035~~354 Halekou Pl, Kaneohe 96744	gabriedm@yahoo.com	
JOHN HENDERSON	1238 KAINUI KAILUA HI 96734	JRHENDERSON@HAWAII.RR.COM	
Jerry Norris	711 KAPIOLANI #500	JERRY@OHA.ORG	NO
Argyle Kaufman	11251S Alamoana	Argyle.Kaufman@noaa.gov	NO
Krista Graham		Krista.graham@noaa.gov	NO

NOAA FISHERIES SERVICE

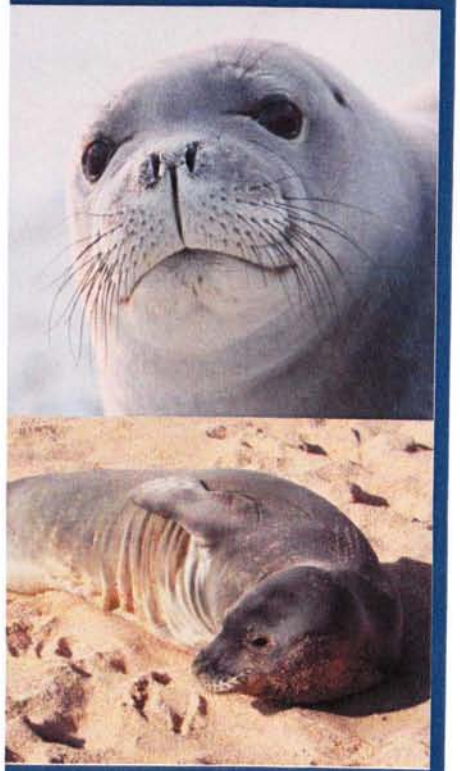
Science, Service, Stewardship

Entered 11/5/10 LLD

Sign-In Sheet

Hololulu
Central Union Church
October 20, 2010

Name	Address	Email	Would you like to make verbal comments tonight?
Frank Parrish	44-211 MAILE PL KANEOHE HI	FRANK.PARRISH@[illegible].GOV	
Pat Opay	1601 Kapiolani	Patrick.Opay@noaa.gov	
Lesley Macpherson	6710 Hawaii Kai Dr. 112	lesleymc@hotmail.fr	
Karen Rohter	1684 Halelewa Dr. Hon 96821	Karenrohter@gmail.com	
DAVID NICHOLS		DAVID.NICHOLS@NOAA.GOV	
LARRY BEECH	51-023 LAU PLACE KAAAWA, HAWAI'I, 96730	lbeech@hawaii.edu	
ERIC TONG	1443 KALAEPŌHAKU ST. HONOLULU, HI 96816	ERIC.TONG@NOAA.GOV	
BUD ANTONELIS	543 Ka Awakea Pl	bantonelis@aol.com	Maybe
Kathryn Stanaway	574 Papu Dr Honolulu, HI	kathryn.stanaway@noaa.gov	no
Megan Brooker	1601 Kapiolani Ste 1110 HNL, HI 96814	megan.brooker@noaa.gov	no



NOAA FISHERIES SERVICE

Science, Service, Stewardship

Entered 11/9/10 LLD

Sign-In Sheet

Honolulu
Central Union Church
October 20. 2010

Name	Address	Email	Would you like to make verbal comments tonight?
Jessica Lopez	1125 B Ala Moana Blvd. Honolulu HI 96814	Jessica.lopez@noaa.gov	
Thea Johanos	201 A Portlock Rd Honolulu, HI 96825	tjohanos@hotmail.com	
Colleen Sudzinski	1630 Liholiho St #2310 Honolulu, HI	Colleenjo@gmail.com	
Kathleen Gobush	3061 Pualei Cir 206B Honolulu HI	kathleen.gobush@noa.gov	—
Mark Sullivan	3805 Lower Rd. Honolulu, HI 96822	marksullivan@gmail.com	
Wendy Mauks	1884 Komaia Pl Honolulu, HI 96822	wbmauks@gmail.com	—
POOLA VILLARIMO (VILLARIHO)	P.O. Box 31011 Honolulu, HI 96820	—	—
JEFF PAWLOSKI	41-202 KALANIANAOLE #7 WAIMANALO, HI 96795	jpawloski@sealifeparkhawaii.com	—
Heide Weber	99-1655 Hoapono Pl Aiea HI 96701	heide.weber@yahoo.com	
SEAN GUERIN	68-419 OLOHIO STREET WAIALUA, HI 96791	SEGUERIN@GMAIL.COM	NAH

NOAA FISHERIES SERVICE

Science, Service, Stewardship

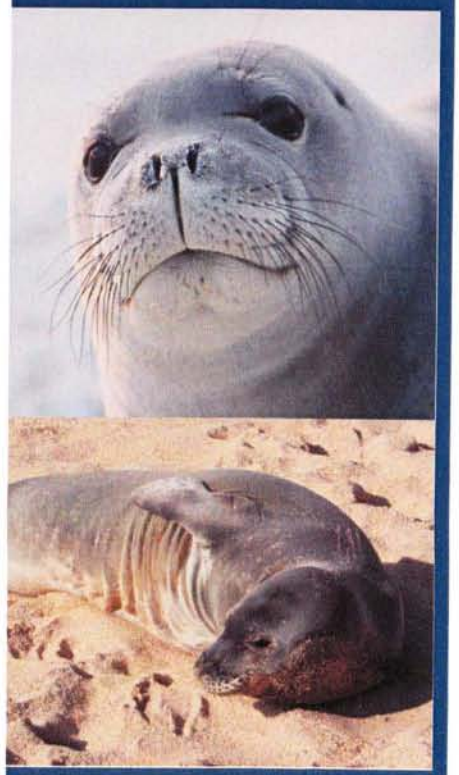
Entered 11/5/10 LLD

Honolulu
Central Union Church
October 20. 2010

Sign-In Sheet

Hololulu
Central Union Church
October 20. 2010

Name	Address	Email	Would you like to make verbal comments tonight?
Jennifer Schultz	45-315 Liliputa Rd A301 Kaneohe HI 96744	jschultz@hawaii.edu	No
Naomi Yamamoto	47-658 Huikelu St. #4 Kaneohe, HI 96744	naomi.yamamoto@noaa.gov	NO
Caitlin Snyder		Caitlin_snyder@fws.gov	NO
Leona Laniawe		Leona_Laniawe fws.gov.	No
Justin Rivera		justin.rivera@noaa.gov	No
Hoku Johnson	6600 Kalaniaole Hwy. Ste 300 H-H 96825	hoku.johnson@noaa.gov	NO
Heather Tipon	a		No
Susan McMahon			No.
GEORGE MATSUDA	94-400 NUI ST MILILANI, HI 96789	TRAPDIVER55@yahoo.com	NO
KekoBonk	3734 – Harding Ave 96816	kbonk@hawaii.rr.com	Yes



NOAA FISHERIES SERVICE

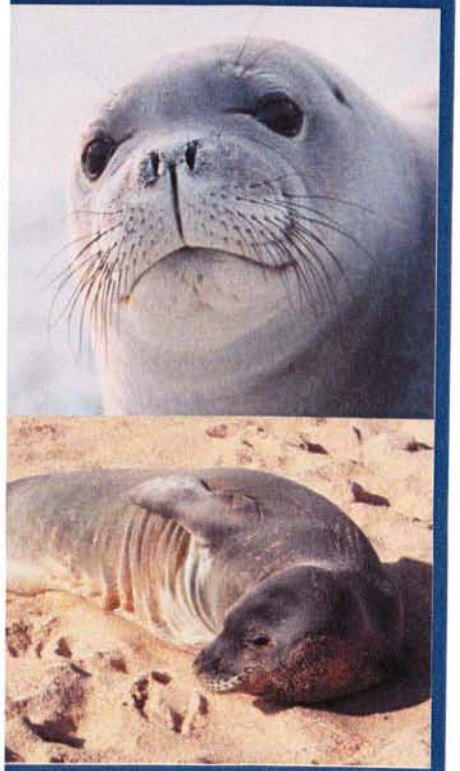
Science, Service, Stewardship

Entered 11/3/10 LLI

Sign-In Sheet

Honolulu
Central Union Church
October 20, 2010

Name	Address	Email	Would you like to make verbal comments tonight?
RANDALL PEREZ	1114 Wilder Ave 96822	~~rdperez@~~ rlperez@hawaii.edu	maybe
Laura McCue	6218 Kawaihae Pl 96825	mccue.laura@gmail.com	no
Brenda Becker	1633 Bertram St. 96816	brendakeebecker@gmail.com	no
Mark Matsunaga	3343 Duval St 96815	mark.matsunaga@gmail.com	no
Stacey Stella	1161 Mo Kuhano St. A104 Hon HI 96825	joelandstacey3@gmail.com	no
Carl Jelling	89-252 Lepeka Ave		Maybe
Beth Doescher	Waimanalo HI 41-202 Kalanianaole Hwy #7	bdoescher@sealifepark hawaii.com	No
Kiana Kauwe	3415 Kilauea Ave Hon HI 96816	kianakauwe@gmail.com	no
~~Kiana~~ Colleen Heyer	3641 Diamond Head Rd Hon HI 96816	colleen808@mac.com	no
Lisa White	DLNR	lisa.white@hawaiiantel.net	N



NOAA FISHERIES SERVICE

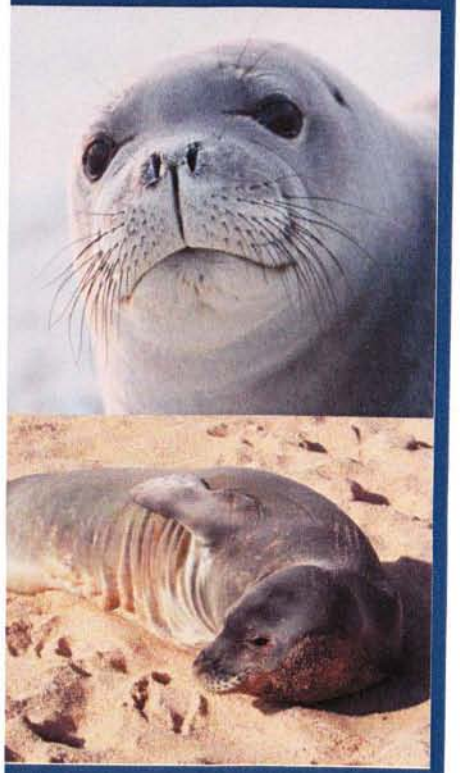
Science, Service, Stewardship

Entered 11/5/10 LLD

Sign-In Sheet

Honolulu
Central Union Church
October 20. 2010

Name	Address	Email	Would you like to make verbal comments tonight?
Malia Chan		malia.chan@noaa.gov	no.
Paula Hartzell	FWS/PMNM		
DEAN K. OBOSKI	1808 LILIOLA ST. HON 96826	N/A	
James Haae	1471 Puea ST. Hon. HI 96816	123456.James@live.com	



NOAA FISHERIES SERVICE

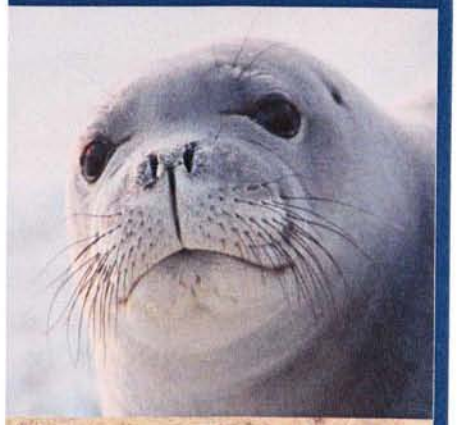
Science, Service, Stewardship

Entered 11/5/10 LLB

Sign-In Sheet

Honolulu
Central Union Church
October 20, 2010

Name	Address	Email	Would you like to make verbal comments tonight?
Marti Townsend	PO Box 37368 Hon. 96837	marti@kahea.org.	X
Jean Harris	61-230 Kam Hwy 96712	jean@kahea.org	
Paul Wong	6600 Kalanianole Hwy	paul.b.wong@noaa.gov	



NOAA
FISHERIES
SERVICE

Science, Service, Stewardship

Entered 11/5/10 LD

Sign-In Sheet – Hilo, Hawai'i

October 21, 2010
Mokupapapa Discovery Center

Name	Address	Email	Would you like to make verbal comments tonight?
Mary Musacchio	15-1058 Moaniala Pahoa HI 96778	pinatic43@hawaiiantel.net	
Camilla DuLac	RR2-Box 4574, Pahoa HI 96778	camilladulac@gmail.com	?
Manu Aluli Meyer	Pahoa 136 Alae, Hilo	[illegible]@hawaii.edu	
Luana 9.9 Neff	P.O.B. 348 Papaikou	—	
Jason Turner	1209C Kaumana Dr. Hilo, HI 96720	JPTURNER@HAWAII.EDU	
John Kahiapo	75 Aupuni St. Hilo	John.N.Kahiapo@hawaii.gov	
Sue Green	653 Kupulau Rd. Hilo	su3.gr33n@gmail.com	
Cory Harden	Box 10265		
Nancy & Randal Brickner	PO Box 1564 Keaau 96749	NANRANDY@EARTHLINK.NET	
John + Liz Field	133 Puhili St Hilo HI 96720	ALOHALIZ@HAWAII.RR.COM	

NOAA FISHERIES SERVICE

Science, Service, Stewardship

Entered 11/5/10 LLD

Sign-In Sheet

Hilo
Mokupapapa Discovery Center
October 21. 2010

Name	Address	Email	Would you like to make verbal comments tonight?
Rebecca Rogers	525 w. Lanikaula St #B208 Hilo, HI 96720	rmrogers@hawaii.edu	
Callie Schwab	521 w. Lanikaula st Hale Ikena G201 Hilo, HI 96720	Callie7@hawaii.edu	
Amy Nordin	68-1375 Pauoa Pl C-2 Kamuela HI 96743	anordin@hawaii.edu	
Reid + Debbie Takayama	PO Box 5330 Hilo, HI 96720	hawaiidog@hawaii.rr.com	?
Darren Roberts	332 Kawila st apt 1 Hilo HI 96720	robertdarren@gmail.com	?
Hauoli Busby	P.O. Box 348 Papaikou, HI 96781	hauoli.busby@gmail.com	
Craig Severance	154 Honolii Place Hilo, HI 96720	sevc@hawaii.edu	yes
Roxane Stewart	94 C W Kawailani St Hilo 96720	rstewart99489@hawaii.rr.com	

NOAA FISHERIES SERVICE

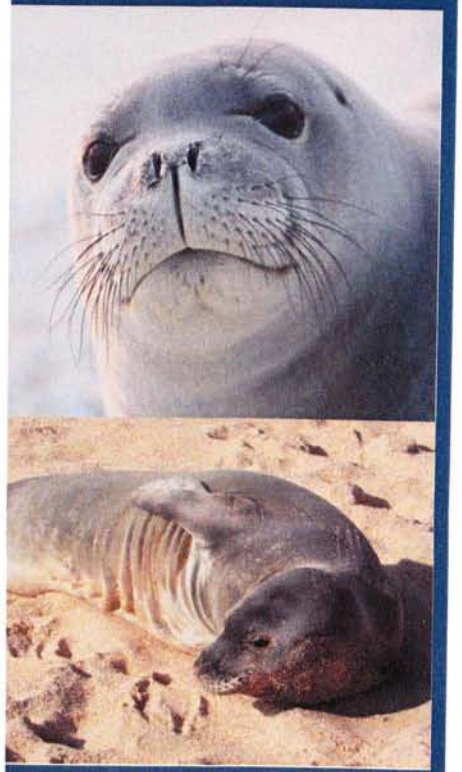
Science, Service, Stewardship

Entered 11/5/10 LLD

Sign-In Sheet

Hilo
Mokupapapa Discovery Center
October 21. 2010

Name	Address	Email	Would you like to make verbal comments tonight?
Jani Christopher	P.O. Box 392 Kurtistown	Islandriffic@hawaii.rr.com	NO
Ray Johnson	P.O Box 1800 Hilo Hi 96721	NO	



NOAA FISHERIES SERVICE

Science, Service, Stewardship

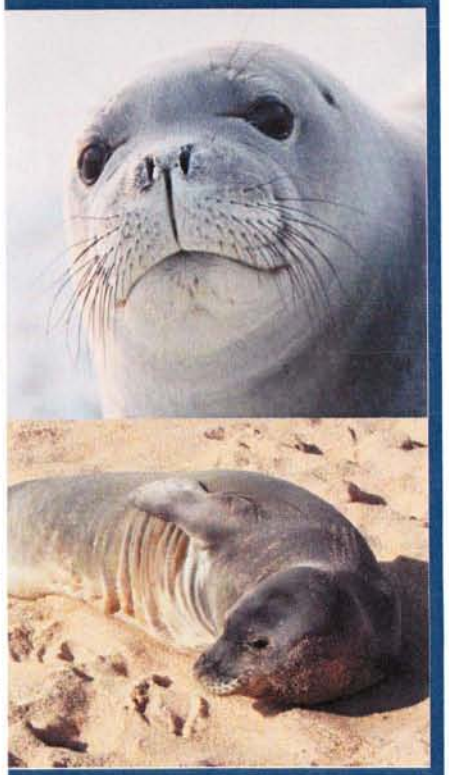
8:05 pm meeting called.

Entered 11/8/10 LD

Sign-In Sheet – Kihei, Maui

October 25, 2010
NOAA Sanctuaries New
Community Learning Center

Name	Address	Email	Would you like to make verbal comments tonight?
George R Harker	PO 1539 Kihei, HI 96753	DrLeisure1@Aol	Yes
Hannah Bernard	PO Box 790637 Paia, Hi 96779	wild@aloha.net	Yes
Sampson S Oshiro	P.O. Box 543 Kahului Hi 96733-		
Basil K. Oshiro	P.O Box 543 Kahului Hi 96733	S.Oshiro17@Hawaii.rr.com	
Joe Fell McDonald	160 Keonekai Rd 16-201 Kihei, Hi 96753	Lounge@tiki.net	NO
Darrell Tanaka	3155 Ula Nui Pl Haiku Hi 96708	sunshineorchids@gmail.com	Yes
Rich Hildebrand			
Steve Downey	P.O Box 1598 Kihei Hi 96753	whitekahuna@Hawaii.RR.Com	?
Ed Lyman	726 S. Kihei Rd Kihei Hi 96753	Ed.Lyman@Noaa.gov	No
Aimoku Lehua Pali	P.O. Box 1132 Kula, Hi 96790	EGKAimoku Pali @yahoo.Comm.	?



NOAA FISHERIES SERVICE

Science, Service, Stewardship

Entered 11/10/10 LLD

Sign-In Sheet

Name	Address	Email	Would you like to make verbal comments tonight?
Donna Brown	82 S. Lanhoe Pl. Lahaina	donnabro@hawaii.edu	No
CHERYL STERLING	COUNTY of MAUI, OED WAILUKU	cheryl.sterling@mauicounty.gov	
Cheryl King	191 N. KIHEI RD Apt 601 KIHEI HI 96753	cking@kirc.hawaii.gov	N
Judy Edwards	PO BOX 1350 PUUNENE, HI 96784	judy.q.edwards@hawaii.gov	NO
BILL LEWIS		bill_Lewis@hawaii.rr.com	No thanks.
LAYNE NAKAGAWA	816 E. KAENA PL. WAILUKU HI 96793	KAMIKAZEFISHCOMPANY@G-MAIL.COM	
GREGORY SPENCER	993A Kupulau Dr. Kihei HI 96753	gspencer@firstwind.com	NO
KIMOKEO KAPAHUCHUA		HONOKOHAU@GMAIL.COM	
John & Gina Biondi	50 Puu Anoano #3003 Lahaina, HI 96761		
Malie Unabia Varka	25 Keapua St Wailuku		No

NOAA FISHERIES SERVICE

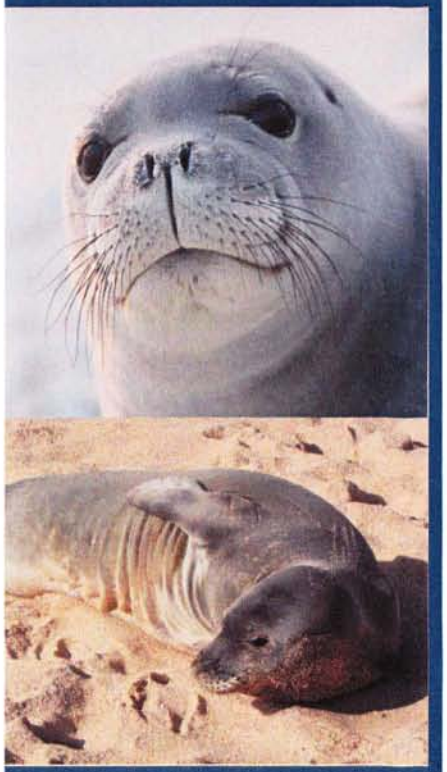
Science, Service, Stewardship

Entered 11/10/10 LLD

Maui
NOAA Sanctuaries NCLC
October 25, 2010

Sign-In Sheet

Name	Address	Email	Would you like to make verbal comments tonight?
James Gomes	P.O. Box 687 Kihei		
John Mestor	116 Kupuna Kea St		
Foster Aonpong		kekahunakeawaiwi@yahoo.com	Yes
Suzanne Carlon	993A Kupuhau Dr.		



NOAA FISHERIES SERVICE

Science, Service, Stewardship

Maui
NOAA Sanctuaries NCLC
October 25, 2010

Entered 11/10/10 LLS

Sign-In Sheet

Name	Address	Email	Would you like to make verbal comments tonight?
[illegible]	Hi Pumehana		NO
DRAKE Wells D. WELLS	HALE PUMEHANA	@[illegible]	YES
J McKim	Home Pumehana	higglohamster@yahoo.com	no
Smith	Alice L. Smith	K'kai Molokai	no
Leilani E. Kohler	P.O. 108 K'kai, Molokai Hi.		
KAREN ASHLEY	P.O. BOX 1302 KAUNAKAKAI	karen_ashley@hotmail.com	
DIANE PIKE	PO BOX 169 KUALAPUU 96757	dihi@wave.hicv.net	

NOAA FISHERIES SERVICE

Science, Service, Stewardship

Entered 11/10/10 LCD

Moloka'i
Hale Mahaolu Home Pumehana
October 26, 2010

Sign-In Sheet – Kaunakaka'i, Moloka'i

October 26, 2010
Hale Mahaolu Home Pumehana

Name	Address	Email	Would you like to make verbal comments tonight?
Walter Naki	P.O. Box 1269 K'lkai Hi 96748		maybe? ↑ WHAT HE SAID
GREG KAHN	PO BOX 239 K'KAI HI 96748	GEEKAHN @ GMAIL	
CAPT CLAY CHING	POB 732 KAUNAKAKAI HI 96748	MOLOKAIAKE @ GMAIL.COM	YES
Heather Driscoll	P.O Box 82219 Kaunakakai 96748	heather@themolokaidispatch.com	
Walter Ritte	P.O Box 486 K'lkai HI 96.	ritterw@hotmail.com	YES

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Science, Service, Stewardship

Entered 11/10/10 JJD

Sign-In Sheet – Lihu'e, Kauai

October 27, 2010
Wilcox Elementary School

Name	Address	Email	Would you like to make verbal comments tonight?
Phillip Tanner	POB 391 Eleele 96705		no
Millie Johnston	1988 Pahoohoost Koloa Hi 96756	Seallady@Gmail.com	
Greg Holzman	PO Box 764 Kekaha Hi 96752	cycads@hawaii.rr.com	yes
Kawika Critchlow	P.O Box 674 Anahola 96703		Yes
Lynn Nowatzki	1775 Poipu Rd Koloa 96756	Kauailynn@yahoo.com	No
Sharon Ponroy	POB. 600 Anahola		Yes
Kelii Alapai	P.O. Box 22-3205 P-Ville	Kelii05315@hotmail.com	
Ray Catania	4215 Kole Pl Lihue 96766	mayi nineteen 71 @gmail.com	
Bradley Chiba	2907 hoolako Lihue		—
KEN TAYLOR	1720-A Makaleha Pl. Kapaa 96746	taylorkoz@hawaii.rr.com	—

NOAA FISHERIES SERVICE

Science, Service, Stewardship

Ent 11/10/10 JHP

Sign-In Sheet

Name	Address	Email	Would you like to make verbal comments tonight?
Warren Wataya	PO Box 803 Kapaa Hi 96746	Wataya4@MSN.com	No
Joel Sumida	6634 Alahele St. Kapaa		No
Michael Oishi	P.O. Box 3184 Lihue	mikejowao@Gmail.com	NO
William George	P.O. Box 51040 Eleele, HI 96705	madworkc@hawaiian.net	?
Makana Bacon	PO Box 428 96754	jsbmaab@yahoo.com	?
David Tsunehiro	4865 Haleilio Rd Kapaa 96746		
James C. Yamamoto	6457 Ahele Dr	Kapaa	
Richard Hurumoto	1284 Crossley Rd	Kapaa	NO
Mark Oyama	P.O. Box 130 Lawai HI 96765	moxama@Hawaii.edu	
Kimo Rosa	P.O Box 381 Anahola HI 96703		Yes

NOAA FISHERIES SERVICE

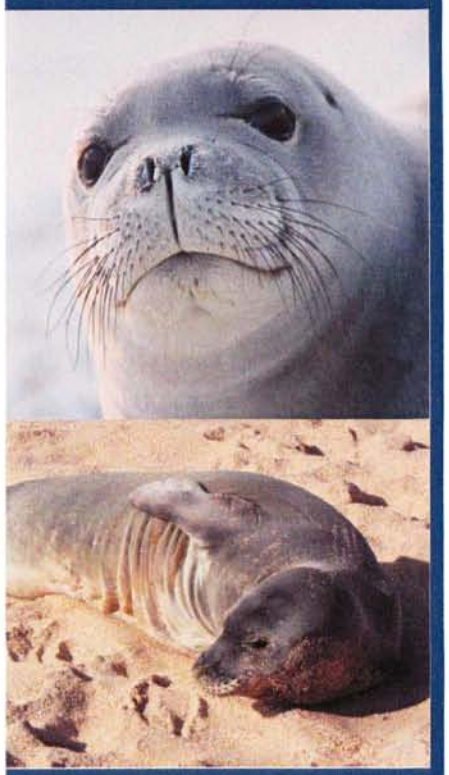
Science, Service, Stewardship

Kaua'i
Wilcox Elementary School
October 27, 2010

Ent. 11/10/10 JJD

Sign-In Sheet

Name	Address	Email	Would you like to make verbal comments tonight?
CALVIN TAU	Kapaa		
Paul Stewart	Hanalei	alkayak@aloha.net	
Kim Rogers	Anahola	KIMSROGERS@mac.com	
David Okamoto	Eleele		
Barry Werthwine	Omao		
Mary Werthwine	Omao		
Shyla Moon			
Randall Haraguchi	Hanalei		
Paul Haraguchi	Hanalei		
Ke Kumu Po			



NOAA FISHERIES SERVICE

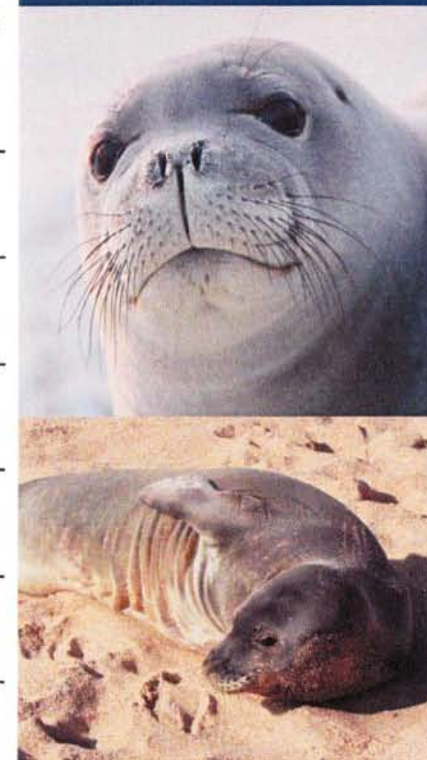
Science, Service, Stewardship

Kaua'i
Wilcox Elementary School
October 27, 2010

ENT 11/10/10 SD

Sign-In Sheet

Name	Address	Email	Would you like to make verbal comments tonight?
Sokne + Mike Oishi	2075 Puu Kan	Mikesomao. Gmail	
Yasu Morikawa	4280 Kailewast 96766	———	?
Frank R. Medeiros	5406 Kaloalihale Rd., Kapaa 96746	———	
Kevin Millett		Kalewacat@gmail.com	?
Derek Inouye	2740 Kapena St.		
Rep Tokioka	State Capitol		
Sophia Senter	PO Box 1268 Lawai, HI 96765	alohasophia@live.com	
Tineal Puaoi	PO Box 91 Anahola Hi 96703	darkdemon102@hotmail.com	NO
Adrian Bulosan	4342 Ualimapala	———	———
Soromo Arakaki	P.O. Box 152 Lawai	chibaru2@hawaiiantel.net	



NOAA FISHERIES SERVICE

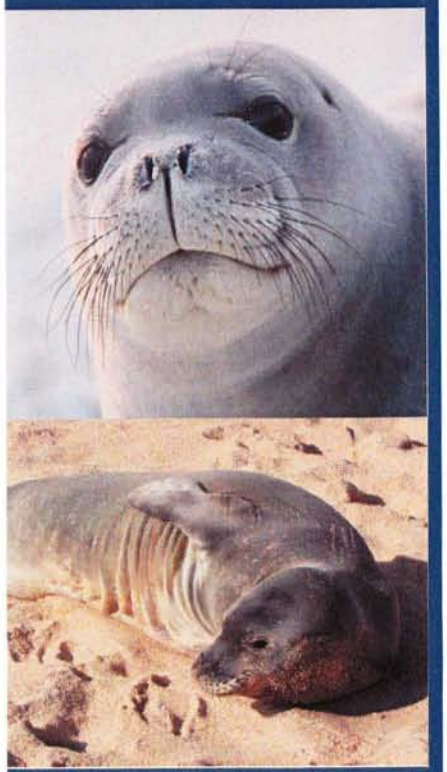
Science, Service, Stewardship

Ent 11/10/10 JBR

Kaua'i
Wilcox Elementary School
October 27, 2010

Sign-In Sheet

Name	Address	Email	Would you like to make verbal comments tonight?
Lyn McNutt	5949 Kini, Kapaa	Zensea1@gmail.com	No
Shanna + Forrest Cloud	1775 Pe'e Rd Koloa	treecloud@earthlink.net	NO
Annie Hashimoto	P.O. Box 419 Kilauea 96754		No
Bill & Brenda Barnard	PO Box 1124 Kalaheo	b2barnard@aol.com	
Lane Tamura	Box 529 Kilauea		no
Michele Bane	PO Box 1176 Lawai, HI 96765	watermunchkin@netzero.net	
[illegible]	PO Box 417 [illegible]		no
Mimi Olny	3954 Kiani St. Koloa 96756	m_olny@hotmail.com	
Lance Y Matsumoto	P.O. Box 1132		?
Joel P. Miyashiro SR	P.O. Box 91 Hanamaulu		Y



NOAA FISHERIES SERVICE

Science, Service, Stewardship

Kaua'i
Wilcox Elementary School
October 27, 2010

EWT LLI 11/10/10

Sign-In Sheet

Name	Address	Email	Would you like to make verbal comments tonight?
Isaac Moon		Isaacmoon@gmail	✓
Shyla Moon	PO Box 1233 Kalaheo HI	Shyla Moon@gmail	✓
Goldie Stewart	PO Box 90 Hanalei		✓
Cody Jamaucha	4265 Oio St. Lihue		
Victor Sasaki	3145 Inouye St Lihue		
[illegible]	P.O. Box 1896 Koloa		
Cody Graham	P o Box 907 Kdoa	cody@codygraham	
Aaron Ageng	4471 mua st		
Adams Bulogan	4362 Uahiapele st	bulogan@gmail.com	
Leimomi a Manin Lur	485 Moli st. Kapaa	leimomip2002@yahoo	

NOAA FISHERIES SERVICE

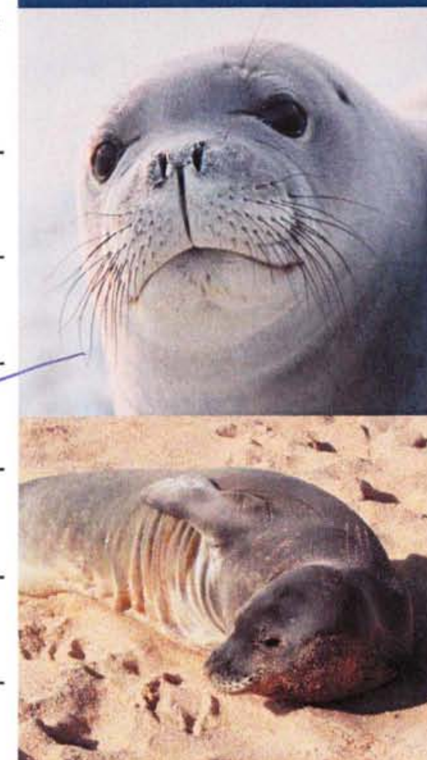
Science, Service, Stewardship

Kaua'i
Wilcox Elementary School
October 27, 2010

txt 11/10/10

Sign-In Sheet

Name	Address	Email	Would you like to make verbal comments tonight?
Thomas Makanani	1955 Hulali Lp. Kapaa Hi 96746		
Ahonalani Hadley	Kapaa Hi 96746		
Gerald Hurd			✓
Wanda Ibia	Kapaa 96746		
Wesley Haraguchi	Hanalei 96714		
Dennis Silva	P.O Box 1004 Koloa 96741		
Joan Kealalio	5821 Ahakea St Kapaa 96746		
Kip Furugen	P.O. Box 202 Kapaa		
Mary Frances Meyoshiro	6585 Waipouli Rd Kapaa		
Wayne Rimmer	PO Box 483 Anahola 96703		



NOAA FISHERIES SERVICE

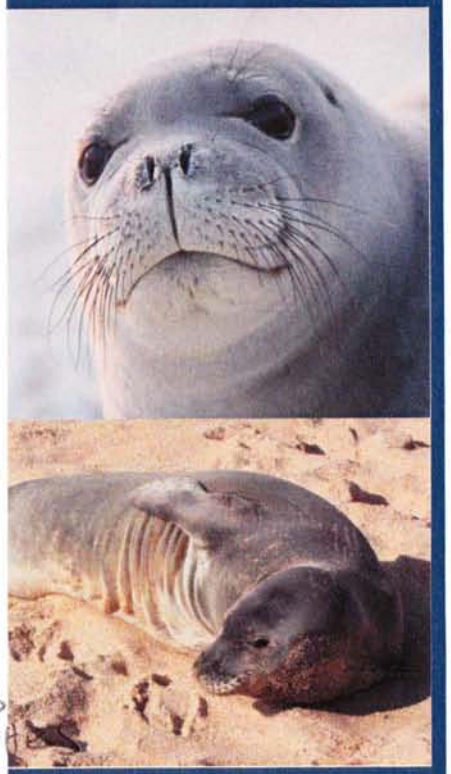
Science, Service, Stewardship

Kaua'i
Wilcox Elementary School
October 27, 2010

Ent 11/10/10 [illegible]

Sign-In Sheet

Name	Address	Email	Would you like to make verbal comments tonight?
Matthew Fernandez	4641 Pula Pula PL. Lihue Hi, 96766	islandsoljah2@yaho.	
Eric Ichikasa	P.O. Box 3338 Lihue HI 96766	[redacted]eichichi@Hotmail.com	
KEITH OSHITA	PoBox 123 ANAHOLA HI, 96703		
Akira Obatake	4281 Malae Street Lihue HI 96766	akira Obatake@Yahoo.com	
KipuKai KUALI	4210 Rice St #A2 Lihue, HI 96766	kipukai@kualii.com	
Jodi Hiranaka	2[redacted]81 Hoolako St. Lihue, HI 96766	jodikh2l@hotmail.com	WE NEED OUR BEAC



NOAA FISHERIES SERVICE

Science, Service, Stewardship

[redacted] Kauai
[redacted] Wilcox School
[redacted] OCT 28 2010

ENT 11/10/10 JSP

Sign-In Sheet

Name	Address	Email	Would you like to make verbal comments tonight?
Daniel Kauchola	P.O Box 458 Anahola		
Faith Kinimaka	POB 510225 Kealia		
Pita Lata	4851 Okia PL Lihue HI 96766		
Leilani Furugen	Box 202 Kapaa		NO
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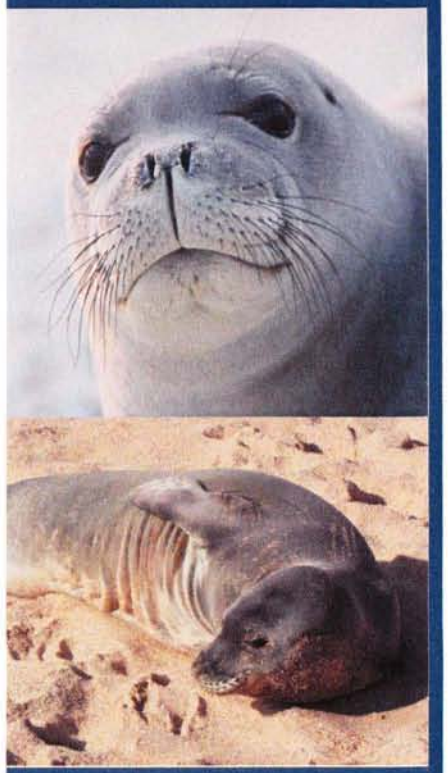
MARVIN Lum	425 Molo St. Kapaa		—
[illegible]	4528A Hauola Rd. Kapaa		NO
Keoki Puaoi	P.O. Box 91 Anahola 96703	kpuaoi@hawaii.rr.com	A'OLE
Bruce Javellana	PO Box 275 Anahola 96703		NO



NOAA FISHERIES SERVICE

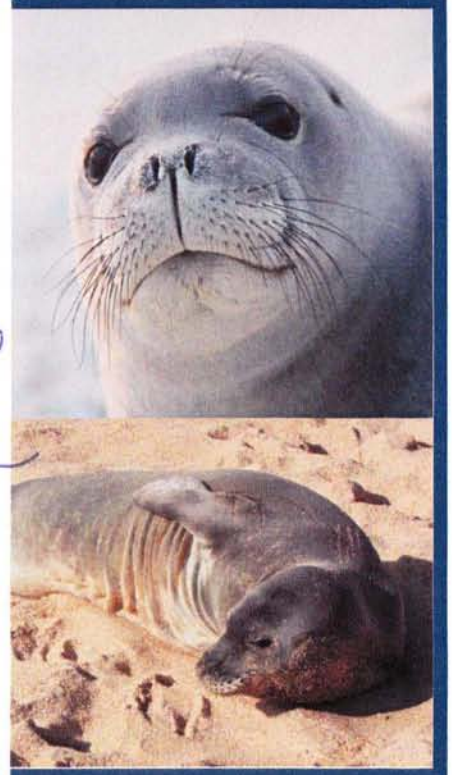
Science, Service, Stewardship

[redacted] Kauai
[redacted] Wilcox School
[redacted] Oct 28 2010

ENT. 11/10/10 JSP

Sign-In Sheet

Name	Address	Email	Would you like to make verbal comments tonight?
WARREN KAGA	2576 APAPANE ST.	WKoga@Kauai.gov	
Randall Takemka	4646 Hanapepe Rd		
Hope Kalli	POB 655 Kilauea	lokahipath2@live.com	✓
Nathan Kaai	PO Box 1567 Kapaa	nathankaai@Yahoo.com	
Season Sekiguchi	4216 Puaolu ST Lihue		



NOAA FISHERIES SERVICE

Science, Service, Stewardship

Kaua'i
Wilcox Elementary School
October 27, 2010

ENT 11/10/10 JSP

Sign-In Sheet

Name	Address	Email	Would you like to make verbal comments tonight?
Quintin Leong		quintinleong@yahoo.com	✓
Carl Berg		cberg@pixi.com	Yes
[illegible]	[illegible]	[illegible]	yes
Kara Chow		karachow84@gmail.com	
Adam Asquith	4654 Hauaala Rd		yes
Sean			~~yes~~
Ryan McKeague	P.O. Box 835 Anahola HI 96703		
Mytea McKeague	" "		
GORDON LABEDZ	PO Box 808 WAIMEA, 96796	GLaBedzMD@aol.com	

NOAA FISHERIES SERVICE

Science, Service, Stewardship

Kauai
Wilcox School
Oct 27 2010

Ent 11/19/10 [illegible]

Sign-In Sheet

Name	Address	Email	Would you like to make verbal comments tonight?
[illegible]	2110 P.O Box		
Jerrie Louis	Po Box 318 Hanapepe	JR.Equipment@live.com	
Duane Wakuta	5433 Kuapapa St Kapaa 96746		
Ken Miyoshi	235 Molo St		
Ben Butler	2194 Liliuokalani st	96754	
Russall Abren	5911 [illegible] pl		
Scot Mygaes	Po Box 1222	scottmygares@yahoo.com	
[illegible]	Box 22 Hanalei	junedaleh@gmail.com	No
Tad Sheldon	P.O BOX 510061 Kealia	//	
Darrell Rapozo	5641 Kulamanu St. Kapaa Hi 96746 ~~4965 Anonoula Rd~~	Drapozo@gmail.com	

Kauai
Wilcox School
Oct 27 2010

NOAA FISHERIES SERVICE

Science, Service, Stewardship

Ent 11/10/10

Sign-In Sheet

Name	Address	Email	Would you like to make verbal comments tonight?
Jake Schaefer	P.O. Box 1194 Lawai		
Lauren Rosen	P.O. BOX 381 Anahola	rosslauren@aol.	NO
GREGORY MAGAS	PO. BOX 673 ANAHOLA		YES
Ronald Eckberg	P.O. Box 1088, Kilauea	wherik@yahoo	?
Ke Kano Pa	P.O. Box 265 Lihue		YES
Ellen Coulombe	3764 Kikee Rd. Kalaheo	ellen.coulombe@gmail.com	NO
KAMOHO'ALII - KAMA	PO Box 158 ANAHOLA HI		NO

Kauai
Wilcox School
Oct 27 2010

NOAA FISHERIES SERVICE

Science, Service, Stewardship

EMT 11/10/10

Sign-In Sheet

Name	Address	Email	Would you like to make verbal comments tonight?
THOMAS K. MATSUYOSHI	P.O. BOX 23 ELEELE HI. 96705	tmatsuyoshi@hawaii.rr.com	
Jan McClaran	PO Box 237 96703		
Crystal Fujinaga	1644 Papa Pl.	fujinu@aol.com	

NOAA FISHERIES SERVICE

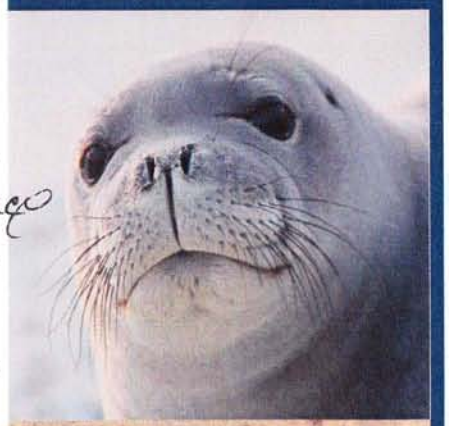
Science, Service, Stewardship

Kauai
Wilcox School
OCT 27 2010

ENT 11/10/10 JSR

Sign-In Sheet

Name	Address	Email	Would you like to make verbal comments tonight?
Cheryl Lovell-Obate	P.O. Box 366 Lihue HI 96766	kuhizu@hotmail.com	turned in announce



NOAA FISHERIES SERVICE

Science, Service, Stewardship

Kauai
Wilcox Elementary
Oct 27, 2010

Ent 11/10/10

Welcome!

NOAA FISHERIES SERVICE

Scoping Meeting for the Hawaiian Monk Seal Recovery Actions Programmatic Environmental Impact Statement

Who is NMFS?

The National Marine Fisheries Service (NMFS) is a federal agency that is responsible for protecting and improving survival of Hawaiian monk seals as required by two laws—the Endangered Species Act and the Marine Mammal Protection Act.

What is a Hawaiian monk seal?

A Hawaiian monk seal is an endangered species that lives only throughout the Northwestern Hawaiian Islands (NWHI) and the Main Hawaiian Islands (MHI). Hawaiian monk seals existed for about 10 million years and they are the only warm water tropical seals.

How many Hawaiian monk seals are there and why is the population declining?

Only about 1,100 - 1,200 Hawaiian monk seals remain and the population is declining by 4 percent each year. The population is declining because there is:

- Low juvenile (less than 3 years old) survival due to starvation, shark predation, and entanglement
- Few maturing females, so fewer pups are born
- Low birth rate

What is "Scoping" and what is the purpose of this "Scoping" Meeting?

"Scoping" is the part of the National Environmental Policy Act (NEPA) process that gives you a chance to share your thoughts, concerns, and comments with NMFS. By sharing this with NMFS, they can know what is specifically important to address when they move onto the next step in the NEPA process.

Objectives of this meeting are:

- Provide information on why Hawaiian monk seals are declining and what NMFS is considering to do about it
- Review the purpose and need for the Programmatic Environmental Impact Statement (PEIS)
- Identify issues and potential alternatives that should be considered in the PEIS
- Provide an opportunity for public comments on this process

This PEIS...

- WILL NOT result in any new regulations (for example, on fishing or public access)
- WILL NOT result in new closure areas or restrictions
- WILL evaluate the potential effects of proposed activities (such as translocation and vaccinations) on Hawaiian monk seals, other marine mammals, fish, and wildlife, cultural resources, and socioeconomics.

Hawaiian Monk Seal PEIS

What is NMFS proposing to do?

NMFS is proposing research and enhancement activities to help improve Hawaiian monk seal survival so they will no longer be considered endangered. This action requires NMFS to prepare a PEIS.

Why does this need to be done?

Purpose:

- Promote the long-term viability of the Hawaiian monk seals in the wild
- Allow for reclassification to threatened status and, ultimately, removal from listing under the Endangered Species Act

Need:

- To help slow the decline in Hawaiian monk seal populations and supplement the population in the NWHI

Why is NMFS preparing a PEIS?

NMFS is preparing a PEIS to meet the requirements of NEPA. This law requires that when there is a major federal action, the agency making the action must consider and disclose the impacts to the human environment. Issuing funds and/or a permit to do research or enhancement activities on an endangered species is considered a "major federal action." NMFS is preparing this document to look at a range of activities that could be done to help Hawaiian monk seals increase their total population to a point where they are no longer considered an a "endangered species."

Alternatives

Possible themes that have been identified for alternatives are presented in the table below. The scoping process will help finalize the scope and structure of the alternatives.

	Alternative 1 *(No Action; Current Permit Expires in 2014)*	Alternative 2 *(Status Quo)*	Alternative 3 *(Enhanced Implementation / Proposed Action)*
Research and Enhancement Activities	No new activities authorized after permit expires in 2014. *(NMFS ESA-MMPA Permit No. 10137–04 issued to NMFS Pacific Islands Fisheries Science Center)*	• Population assessment (e.g., counting, resighting, marking for identification, flipper tags); • Health and disease studies (e.g., tissue sampling, morphometric measurements); • Foraging studies (e.g., telemetry, scat collection); • De-worming research (e.g., fecal samples, testing anti-parasite treatments); • Translocation of weaned pups within the NWHI to improve juvenile survival; • Mitigation of fishery interactions (e.g., disentanglement, removal of fishing hooks); and • Mitigation of adult male aggression (e.g., removal and relocation of aggressive males).	Existing and additional activities would include, but are not limited to: • Vaccination studies (including potential vaccination); • De-worming; • Archipelago-wide translocations to improve juvenile survival; and • Behavioral modification (developing aversive conditioning tools to discourage undesirable seal behavior in the MHI, such as interactions with humans or domestic animals).

Behavioral Modification

Why?

- Keep wild seals wild
- Prevent undesirable interactions between seals and people
- Foster a more natural seal/human co-existence

NMFS is considering...

- Strategically moving some recently weaned pups to prevent them from becoming socialized to humans
- Research on how to modify seal behavior
- Developing tools to manage seal behavior

Seal Translocation

Why?

- Improve female survival and bolster NWHI populations
- Maintain natural trend in MHI

Steps in the process (NWHI -> MHI -> NWHI given current trends)

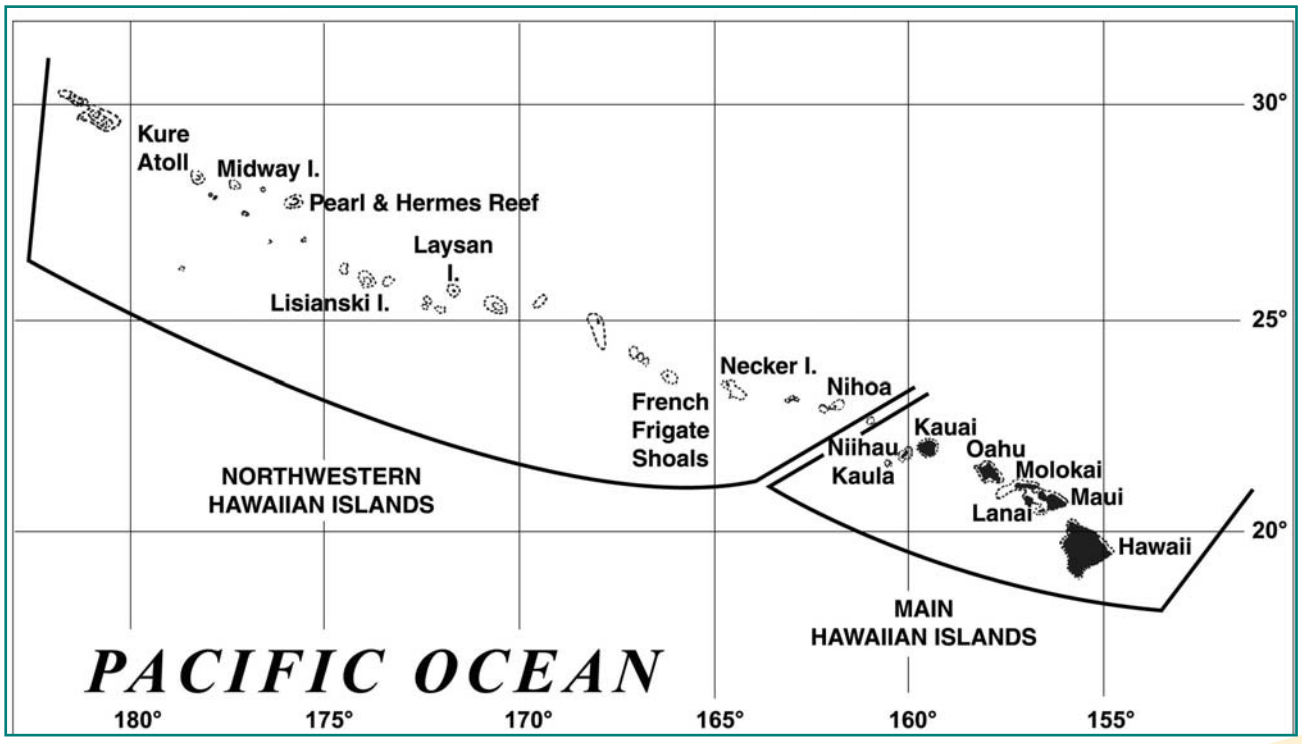
1. Identify female weaned seal pups in NWHI to be moved
2. Take them to MHI and release amongst wild population
3. Manage and monitor seals while in MHI
4. Return seals to NWHI when 3+ years old
5. Monitor returned seals in NWHI to evaluate program success

Key Points

- Phased-in process – start with small numbers, continue only if successful
- Starting in 2012 – at the earliest

Project Schedule

- Notice of Intent – published October 1, 2010
- Scoping Period – October 1 – November 15, 2010
- Scoping Meetings – October 20 – 29, 2010
- Draft PEIS published – Spring 2011
- Public Comment Period on Draft PEIS (minimum 45-days) – Spring/Summer 2011
- Public Hearings – Summer 2011
- Final PEIS published – Fall 2011
- Record of Decision – Early 2012



Project Area

How can I make my comments count?

When making comments, it is helpful to consider some of the following questions and points:

- How do you think research and enhancement activities on Hawaiian monk seals would impact you and what you do?
- What do you like, and what do you not like about NMFS conducting research and enhancement activities on Hawaiian monk seals?
- Give ideas about how to address the Hawaiian monk seal's population decline.
- Give ideas about how to mitigate (lesson or avoid) impacts to you that might be caused by research and enhancement activities.
- Give reference to, or attach any supporting data, reports, studies, etc.

We welcome any other thoughts, concerns, or insights you might have regarding permitting recovery actions for Hawaiian monk seals.

Scoping Meeting Procedures

Please sign up to speak at the registration desk if you have not already done so. After a brief presentation public comments will begin. Speakers will be called in the order they signed in and unregistered speakers will follow.

When providing verbal comment:

- State your name and affiliation (if any)
- Stay within the time limit, additional time as schedule allows

Please leave written comments or additional materials wth project team staff.

**Comments are being recorded by project team staff*

General Ground Rules of the Meeting

- Please make sure pagers and cell phones are off or on vibrate
- Please have mutual respect—please allow others their turn to speak without interruptions
- Please stay within designated time limits
- Please take private conversations outside this meeting room.

For More Information

If you need more information after tonight please feel free to:

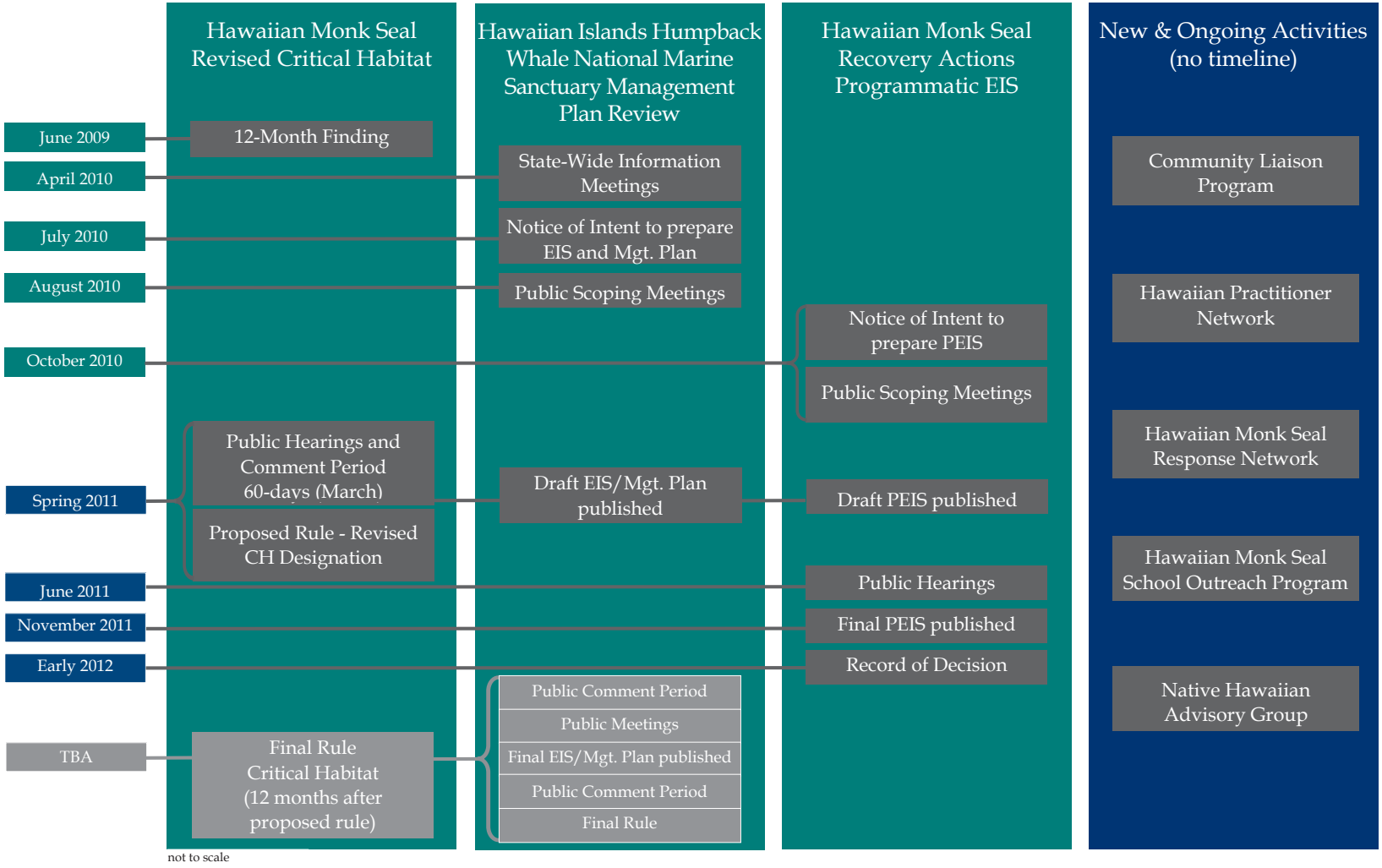
Visit the project website at: http://www.nmfs.noaa.gov/pr/permits/eis/hawaiianmonkseal.htm or contact project team staff:

Jeff Walters
Project Manager & Hawaiian Monk Seal Recovery Coordinator
1601 Kapiolani Blvd., Ste. 1110
Honolulu, HI 96814
e-mail: monkseal@noaa.gov

Providing Comments After Tonight

If you do not feel comfortable giving your comments verbally tonight or if you want to take some more time to put your comments together, you may submit written comments, and mail to the project address, submit via e-mail, or leave the comment with project staff tonight. Pre-addressed comment forms are available at the registration desk.

National Marine Fisheries Service Projects and Activities



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Hawaiian Monk Seal

How to Prevent Seals from Getting Your Fish and Bait

What can you do to minimize the possibility of a seal eating your catch or stealing your bait?

1. Don't feed the seals or discard old bait or scraps into the water if seals are in the area.

One might assume that feeding a seal, or letting it have your old bait and scraps, would keep it satisfied and uninterested in the fish in your net or on your hook - but this is not the case. A seal that has been fed will actually seek out humans because it will learn to associate humans with food and, as a result, become conditioned to not hunt on its own. A seal known as RO42 displayed this conditioning response after being fed by spear fishers as a pup. When she got older, she began biting divers, whom she saw as a source for food, and became a public safety hazard. Eventually this seal had to be relocated away from the main Hawaiian Islands.

2. If you encounter a seal while fishing take a short break or change locations.

Seals are curious creatures and investigate everything. Taking a short break from fishing while they are passing through your immediate area may allow them to move through quickly. Another option is to change your fishing location. Boat based spearfishers should keep their catch out of the water when seals are in the area and shore based spearfishers should attempt to do the same if possible. Additionally spearfishermen should not feed the seals or allow them to take their catch whenever possible. If a seal starts acting aggressively towards yourself or your catch it may be advisable to end the dive or change locations due to safety considerations.

3. Use a barbless circle hook.

Barbless hooks help minimize post-hooking injuries to seals and can still be used with live bait. To learn how to bridle live bait to a barbless hook, visit the Barbless Hook Project website: http://www.fpir.noaa.gov/RCF/barbless_hook.html

NOAA FISHERIES SERVICE

Science, Service, Stewardship

May 2010

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Hawaiian Monk Seal

Relocations to the Main Hawaiian Islands

Q: Were Hawaiian monk seals ever brought to the main Hawaiian Islands (MHI) from the Northwestern Hawaiian Islands (NWHI)?

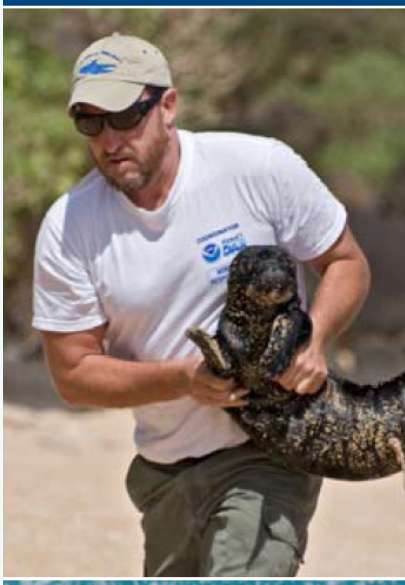
A: Yes. In July and August of 1994, 21 adult male Hawaiian monk seals (*Monachus schauinslandi*) were relocated from Laysan Island in the NWHI to the MHI because males greatly outnumbered females on Laysan Island, creating an unbalanced population. Additionally, some males were injuring and killing female seals. To prevent the further loss of females, it was necessary to remove some of the male seals from the island. Males were selected if they were known aggressors or behaved like aggressors. This is the only known case where seals were taken from the NWHI and released in the MHI. All other seals in the MHI arrived here naturally or were born here.

Q: Were any female seals ever relocated from the NWHI to the MHI?

A: No. All female Hawaiian monk seals in the MHI occur here naturally – only males were relocated from the NWHI in 1994.

Q: Is the relocation of males in 1994 the reason why the monk seal population has been growing in the MHI?

A: No. Before 1994, there was a small naturally-occurring population of male and female monk seals in the MHI. This population appeared to be growing, and at least six pups had been born by 1994 (one in 1962, and five between 1988 and 1993). The relocation is not the source of the MHI seal population and does not represent a contribution to the long term growth of the population because there were already males present that could mate with the females.



NOAA FISHERIES SERVICE

Science, Service, Stewardship

May 2010

Q: Why is the monk seal population in the MHI growing?
A: The population is growing naturally. The number of monk seals that are born in the MHI has increased since the mid-1990s. In 2008 and 2009 there were 18 and 15 pups born, respectively, within the MHI. These pups "wean" (become independent from their mother's milk) at larger and healthier sizes in the MHI than in the NWHI, allowing them a greater chance for survival. Also, certain threats to monk seals in the NWHI, such as shark predation of pups and entanglement in marine debris, are not as severe in the MHI. It appears that Hawaiian monk seals are beginning to settle back in the MHI, where it is thought they once lived long ago.

Q: Are the seals that were relocated in the MHI still around today?
A: The number of relocated males is decreasing with time as they age and ultimately die of natural causes. In 2008, only five of the 21 relocated seals were still remaining, representing about 6% of the 88 known individual seals in the MHI.

Q: Are there plans for relocating any other monk seals from the NWHI to the MHI?
A: There are currently no plans to relocate seals from the NWHI to the MHI, but if necessary, relocation could be considered in the future to avoid extinction of the species.

NOAA Fisheries Service, Pacific Islands Regional Office
www.fpir.noaa.gov

NOAA Fisheries Service, Pacific Islands Fisheries Science Center
www.pifsc.noaa.gov

photo by: Joanne Tabor

Hawaiian Monk Seal

Population and Location

Q: How many monk seals are alive today?
A: The current estimated total is 1,100-1,200 seals.

Q: Where do Hawaiian monk seals live?
A: Most Hawaiian monk seals live in the Northwestern Hawaiian Islands (NWHI), with a small population in the main Hawaiian Islands (MHI).

Q: How many monk seals live in the MHI?
A: In 2009, 113 seals were individually identified in the MHI, based on flipper tag ID numbers or unique natural markings. Including seals that have not been individually identified, NMFS researchers estimate the total number of monk seals in the MHI is at least 150.

Q: Are there more Hawaiian monk seals in the MHI today than there were in the past?
A: Reliable information about the monk seal population in the MHI prior to the 1980's is very limited. Data starting in the 1980's indicate the MHI seal population is growing naturally. Annual monk seal births in the MHI have increased significantly, especially since the mid-1990s. Excluding Niihau, there were 18 and 15 pups born within the MHI in 2008 and 2009, respectively. It is possible that Hawaiian monk seals are beginning to settle back in the MHI, where they once lived long ago. Monk seals seem to be doing well in the MHI despite the relatively high human population. This may be because female seals usually choose remote shoreline areas to give birth. Only a few females have given birth on popular public beaches. There is a misconception that monk seals have been increasing in the MHI because they have been transported by humans or traveled on their own from the NWHI. No one has transferred monk seals to the MHI from the NWHI since 1994. During that year, 21 male monk seals, and no females, were relocated from the NWHI to the MHI. Over time, the number of these relocated seals has naturally decreased as they age, and only four of these seals have been recently observed and reported. Research has also shown that the monk seals rarely migrate from the NWHI to the MHI.

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Identified seals visiting island each year (seals often visit multiple islands)

Q: On what island do most of the Hawaiian monk seals live?
A: Monk seals have been seen on all the MHI. The largest number is likely on Niihau since it is more remote and has less human impact. However, there has not been an official count done on that island. Generally, the number of monk seal sightings tends to increase moving northwest along the island chain and closer to the larger population in the NWHI.

NOAA Fisheries Service, Pacific Islands Regional Office
www.fpir.noaa.gov

NOAA Fisheries Service, Pacific Islands Fisheries Science Center
www.pifsc.noaa.gov

Hawaiian Monk Seal

The Hawaiian Monk Seal's Diet

Q: What do Hawaiian monk seals eat?
A: Hawaiian monk seals generally do not eat just one kind of prey. They eat a variety of fish species ranging from the reef to the depths of over 1,500 feet. They also eat squid, octopus, eels, and several types of crustaceans (crabs, shrimp, and lobster).

Q: Where do monk seals go to find food?
A: Monk seals hunt for food outside the immediate shoreline areas, primarily in the region that is 60-300 feet deep. If fishermen are throw-netting or shore-casting, they will likely not be fishing in the area where the monk seals feed. However, monk seals and fishermen do, on rare occasion, use the same areas. This usually happens along the shoreline as seals leave to or return from feeding. Seals have also been known to eat catch from nets, and bait from fishing hooks. When this happens the seals can become a nuisance. Seals may eat fish and bait because they are "opportunistic feeders." This means that they will feed on a food source if it is "easy" for them to get. They learn these habits quickly. Ultimately this behavior is bad for both seals and fishermen.

Q: Are ulua and papio a main food source of the Hawaiian monk seal?
A: No. Diet studies indicate that they prefer prey that is easier to catch.

Q: Are monk seals eating our fish and decreasing fish stocks?
A: It is unlikely that the small number of seals that live in the main Hawaiian Islands would have a great impact on the local fish populations. We know that they feed over wide areas and eat a wide variety of prey including squid, octopus, eels, crustaceans, and fish. Their impact is limited.

Q: Why are monk seals so fat?
A: Monk seals in the main Hawaiian Islands are naturally fat because they are very good hunters. They typically eat about 3% to 8% of their body weight per day (depending on age/maturity) and they store the excess energy from their prey in the form of fat. This fat is important to provide nutrients when they fast during nursing or molting.

NOAA Fisheries Service, Pacific Islands Regional Office
www.fpir.noaa.gov

NOAA Fisheries Service, Pacific Islands Fisheries Science Center
www.pifsc.noaa.gov

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Hawaiian Monk Seal

Critical Habitat in the Main Hawaiian Islands

Q: What is critical habitat?
A: Critical habitat is a specific area, or areas, that are essential to an endangered or threatened animal or plant in order for it to survive, not go extinct and recover to a healthy population.

This area(s):

- may require special management, like protection from development;
- may include an area that the species is not currently using, but will need to use as its population grows and recovers; and
- is only officially designated after a public comment period.

Q: Is critical habitat similar to a Marine Protected Area (MPA), Marine Life Conservation District (MLCD), Shoreline Fisheries Management Area (SFMA), sanctuary, reserve, refuge, park, or wilderness area?
A: No. Designation of critical habitat does NOT restrict public access.

Q: Will I still be able to recreate in beach areas that have been designated as critical habitat for the Hawaiian monk seal?
A: Yes. A critical habitat designation will not impact access to, and recreation on, the public beaches of Hawaii.

Q: Will I still be able to fish in an area that has been designated as critical habitat for the Hawaiian monk seal?
A: Yes. A critical habitat designation only affects Federal activities (those that are federally authorized, carried out or funded). This means that any fishing within State waters (3 miles or less from shore) will not be affected by critical habitat designation.

Q: Can private developments still occur in an area that has been designated as critical habitat?
A: Yes. The only developments that may be affected are those activities requiring Federal funding or authorization, such as filling of a wetland or repair of a seawall. This precaution is in place to insure that Federal agencies do not destroy or adversely modify critical habitat through development or other activities.

Q: If Hawaiian monk seal critical habitat is designated, when would that happen?
A: Currently NOAA Fisheries is working towards a proposed rule for the revision to critical habitat for the Hawaiian monk seal. Through this process NOAA will be reviewing all current information available and analyzing any impacts that may result from a critical habitat designation. All of this information will be available to the public for comment when the proposed rule is announced. Critical habitat is not in effect until the final rule. The final rule is usually determined a year after the proposed rule when all comments have been received and evaluated.

Q: What is the next step in the process of revising monk seal critical habitat?
A: The next step in the process is the publication of a proposed rule describing the revision of monk seal critical habitat, which will be followed by a public comment period and public meetings.

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May 2010

Activities NOT affected by critical habitat:
Non-Federal activities on private land, such as:

- Construction
- Farming
- Logging
- ATV use
- Hunting

Non-Federal activities on non-Federal public land or water, such as:

- Beach recreation
- Walking the dog
- Hunting
- Ocean recreation in State waters
- Shoreline and lay gillnet fishing in State waters
- Boating & jet-skis in State waters
- Operation of tour vessels in State waters

NOAA Fisheries Service, Pacific Islands Regional Office
www.fpir.noaa.gov

NOAA Fisheries Service, Pacific Islands Fisheries Science Center
www.pifsc.noaa.gov

Attachment F
Agency Scoping Meeting
Information

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Agency Sign-In Sheet

October 20, 2010

NMFS PIRO

Name	Title	Agency	Email
Amy Klein	Biologist – Regulatory	US Army Corps of Engineers	Amy.S.Klein @usace.army.mil
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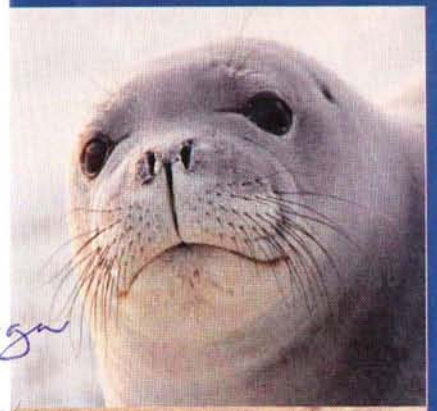
Paul Wong	Ops Coordinator	NOAA HIHWNMS	paul.b.wong@noaa.gov
Amy Sloan	Permit Biologist	NOAA-NMFS-OPR	Amy.Sloan@noaa.gov
ERIC ROBERTS	MPS Manager	U.S. COAST GUARD	Eric.T.Roberts@uscg.mil
TOPHER HOLMES	NMFS NEPA	NOAA/NMFS	CHRISTOPHER.HOLMES@NOAA.GOV
PAULA HARTZELL	Acting Permit Mgr	FWS/PMNM	Paula_Hartzell@fws.gov
Darcy Hu	Ecologist	NPS	darcy_hu@nps.gov
Watson Okuba	EHS V	DOH-CWB	watson.okuba@doh.hawaii.gov
MYRON HONDA	EHS IV	DOH-CWB	MYRON.HONDA@DOH.HAWAII.GOV



NOAA FISHERIES SERVICE

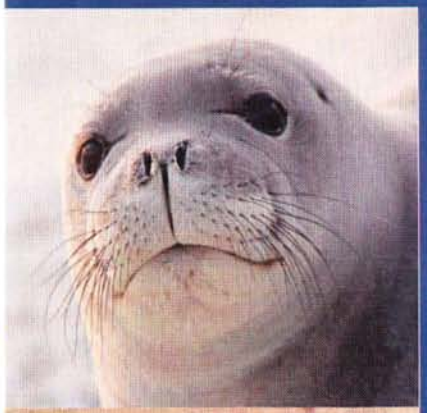
Science, Service, Stewardship

Agency Sign-In Sheet

October 20, 2010

NMFS PIRO

Name	Title	Agency	Email
Hoku Johnson	Policy Coordinator	NOAA/NOS/ONMS Papahanaumokuakea	hoku.johnson@noaa.gov
Lydia Munger-Little	Fishery Policy Analyst	NOAA/NMFS/PIRO	lydia.munger-little@noaa.gov
Malia Chow	Acting Superintendent	NOAA/NOS/HIHW	malia.chow@noaa.gov
Earl M. Yamamoto	Marine Wildlife Program Coord	DAR	earl.mmyamamoto@hawaiantel.net
Lisa White	"	"	lisa.white@hawaiantel.net
Aaron Hebshi	Natural Resources Mgr	Navy Region HI	aaron.hebshi@navy.mil
Matthew Vandersande	NEPA & Permits Coordinator	NOAA/NMFS/PIFSC	matthew.vandersande@noaa.gov



NOAA FISHERIES SERVICE

Science, Service, Stewardship

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
1601 Kapiolani Blvd., Suite 1110
Honolulu, Hawaii 96814-4700
(808) 944-2200 ● Fax (808) 973-2941

Addressee
Company
Address
Suite
City, State Zip

Dear Sir/Madam:

The National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS), Pacific Islands Regional Office is beginning to prepare a Programmatic Environmental Impact Statement (PEIS) on a proposed research and enhancement program to improve juvenile survival of Hawaiian monk seals (*Monachus schauinslandi*). NMFS will be the lead agency in preparing the PEIS in accordance with the National Environmental Policy Act (NEPA). The purpose of this letter is to invite you and your agency to participate in the PEIS process and to provide some background information on Hawaiian monk seal research and enhancement. Please see the enclosed document for additional background information. NMFS recognizes the knowledge and expertise within your agency and welcomes your participation in this effort.

The process of preparing the PEIS formally began with publication of the Notice of Intent to prepare the PEIS in the Federal Register on October 1, 2010. The process is tentatively scheduled to be completed by December 2011. Public scoping meetings will be held October 20-27, 2010, in Honolulu, Hilo, Kihei, Kaunakakai, and Lihu‘e. We also will be holding an additional scoping meeting specifically for government agencies and we would like to invite you and/or your representative to attend this meeting. The purpose of the agency scoping meeting is to brief you on preparation of the PEIS and to solicit your agency’s comments and suggestions. The meeting will be held on October 20, 2010, from 10:00 to 11:00 a.m., at our offices at 1601 Kapiolani Blvd., Suite 1110. In accordance with NEPA, NMFS requests any comments you may have about potential management actions and associated research and enhancement program activities that may be performed on Hawaiian monk seals in an effort to recover the species.

If you would like to participate in the PEIS agency scoping meeting, please notify Jeff Walters, our Hawaiian monk seal recovery coordinator, by phone (808-944-2235) or by e-mail (jeff.walters@noaa.gov). We would appreciate being notified by October 15, 2010. Whether or not you are able to participate in this meeting, your written comments and/or recommendations are welcome and can be sent to monkseal@noaa.gov or 1601 Kapiolani Boulevard, Suite 1110, Honolulu, HI 96814. Please send your scoping comments and/or recommendations no later than November 15, 2010. Please note that this invitation to the PEIS scoping meeting is in addition to our September 14, 2010 letter to you inviting your agency to participate in the PEIS process as a cooperating agency. We look forward to seeing you at the agency scoping meeting and/or to receiving your comments regarding the PEIS.

Sincerely,

Michael D. Tosatto
Acting Regional Administrator

Enclosure
Cc:

Hawaiian Monk Seal Research and Enhancement Activities
Programmatic Environmental Impact Statement

National Marine Fisheries Service
Pacific Islands Regional Office
October 1, 2010

Background Information

The National Marine Fisheries Service (NMFS), Pacific Islands Regional Office (PIRO) is preparing a Programmatic Environmental Impact Statement (PEIS) in accordance with the National Environmental Policy Act (NEPA). As part of the PEIS preparation process, NMFS is soliciting scoping comments on a proposed research and enhancement program for Hawaiian monk seals (*Monachus schauinslandi*).

NMFS is the federal agency responsible for management of Hawaiian monk seals under the Endangered Species Act (ESA) (ESA; 16 U.S.C. 1531 *et seq*.) and the Marine Mammal Protection Act (MMPA) (MMPA; 16 U.S.C. 1361 *et seq*.). In 1976, NMFS listed Hawaiian monk seals as "endangered" under the ESA and "depleted" under the MMPA. As required under Section 4 of the ESA, NMFS published a Recovery Plan for the species in 1983, which was revised in 2007.

Section 7(a)(2) of the ESA, as amended (ESA; 16 U.S.C. 1531 *et seq*.), requires NMFS to ensure that any action it authorizes, funds or carries out (such as research or enhancement), is not likely to jeopardize the continued existence of any threatened or endangered species, or result in destruction or adverse modification of critical habitat. Permits for research and enhancement activities are issued by NMFS pursuant to the provisions of Section 10(a)(1)(A) of the ESA, Sections 104 (c)(3)(A) and 104 (c)(4)(A) of the MMPA, and NMFS regulations implementing these statutes.

The proposed research and enhancement program is being specifically designed to improve the survival of juvenile Hawaiian monk seals in the Northwestern Hawaiian Islands (NWHI). To achieve improved juvenile seal survival in the NWHI, the proposed program is expected to entail an integrated suite of research and enhancement activities for implementation in the NWHI and Main Hawaiian Islands. The intent of the PEIS discussed here is to evaluate, in compliance with the NEPA (40 CFR Parts 1500-1508), the potential direct, indirect, and cumulative impacts on the human environment of the proposed research and enhancement activities under the Hawaiian monk seal recovery program.

Purpose and Need

NMFS is responsible for management, conservation, and protection of Hawaiian monk seal, under the ESA and the MMPA. The NMFS PIRO and NMFS Pacific Islands Fisheries Science Center (PIFSC) are responsible for implementation of the Hawaiian monk seal Recovery Plan (NMFS 2007) and the proposed action, which includes implementation of specific management actions and administering the associated research and enhancement program. The purpose of the proposed action is commensurate with the goal of the Recovery Plan to assure the long-term viability of the HMS in the wild, initially supporting a reverse in overall population decline, eventually allowing for reclassification of Hawaiian monk seals to threatened status, and ultimately, allowing for removal of the species from the List of Endangered and Threatened Wildlife.

The need for the proposed Hawaiian monk seal research and enhancement program is rooted in fundamental biological and ecological factors that are now limiting the population. The Hawaiian monk seal population has experienced a prolonged decline and currently, only around 1,200 monk seals remain. Numerous threats to the survival of Hawaiian monk seals are identified in the Recovery Plan. In the NWHI, young seals are starving, pups are being killed by sharks, seals are getting entangled in marine debris, and sea level rise threatens terrestrial habitats. Low juvenile survival is the primary cause of the population's decline over the past two decades. There is insufficient recruitment of healthy female seals into the breeding population, and the population decline will almost certainly continue without enhanced intervention. Research and enhancement activities, including but not limited to translocating seals from areas of lower to higher survival probability within the NWHI, have been tested and show promise for improving juvenile survival. Additional translocation activities are being considered, along with a suite of other research and enhancement activities, to improve juvenile survival in the NWHI and the overall health of the population.

In the Main Hawaiian Islands, incidents such as disturbance of seals on beaches, hooking and entanglement in fishing gear, and intentional killings (e.g., shootings) counteract recovery efforts. Improved public outreach and education, enforcement of federal statutes, and other actions to protect seals from harmful situations and reduce negative human/seal interactions are essential to minimize impacts in the Main Hawaiian Islands.

A comprehensive research program enables NMFS to recognize, and possibly quantify, factors limiting the population in order to designate appropriate actions to minimize impacts of human-induced activities and other factors affecting Hawaiian monk seal survival. Data and analyses derived from research lead to improved decision-making and strategic management and enhancement activities that promote population recovery, prevent harm, and avoid jeopardy or continued disadvantage to the species. Research and monitoring will continue to play a key role in determining whether enhancement activities achieve their desired outcomes.

Proposed Action and Possible Alternatives

The final scope and structure of the alternatives presented in the PEIS will reflect the combined input from the public, research institutions, affected State and Federal agencies, and NMFS administrative and research offices. The number and structure of the alternatives that are analyzed in the PEIS will be determined after scoping. Themes to include in the range of potential alternatives are presented here to provide a framework for your comments:

- No Action Alternative: Existing permitted research and enhancement activities would continue until expiration of the permit in 2014. Recovery Plan actions beyond 2014 would not be implemented. Currently, the existing research and enhancement activities include, but are not limited to:
    - Population assessment (e.g., counting, resighting, marking for identification, flipper tags, etc.);
    - Health and disease studies (e.g., tissue sampling, morphometric measurements, etc.);
    - Foraging studies (e.g., telemetry, scat collection, etc.);
    - De-worming research (e.g., fecal samples, testing anti-parasite treatments, etc.);

  - Translocation of weaned pups within the Northwestern Hawaiian Islands to improve juvenile survival;
  - Mitigation of fishery interactions (e.g., disentanglement, removal of fishing hooks, etc.); and
  - Mitigation of adult male aggression (e.g., removal of aggressive males).
- Status Quo Alternative: The existing types and scope of research and enhancement activities would continue beyond 2014 under a new permit.
- Enhanced Implementation Alternative (Proposed Action): This alternative considers implementation of activities under the Status Quo, as well as additional activities to achieve more comprehensive Recovery Plan implementation and improved survival of juvenile seals in the NWHI. These additional activities include, but are not limited to:
  - Vaccination research studies (including potential vaccination of Hawaiian monk seals);
  - Aversive conditioning (e.g., develop tools to modify undesirable behavior including interaction with humans or domestic animals);
  - Archipelago-wide translocation of Hawaiian monk seals to improve juvenile survival; and
  - De-worming.

The PEIS under NMFS preparation will assess the direct, indirect, and cumulative effects of implementing the alternative approaches for research and enhancement activities on Hawaiian monk seals, as well as other components of the marine ecosystem and human environment. Anyone seeking to provide information for NMFS to consider in its analysis is requested to provide a description of that information along with complete citations for any supporting documents.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
1601 Kapiolani Blvd., Suite 1110
Honolulu, Hawaii 96814-4700
(808) 944-2200 • Fax (808) 973-2941

SEP 14 2010

Loyal Mehrhoff, Ph.D.
Field Supervisor
Pacific Islands Ecological Field Service Office
Fish and Wildlife Service
300 Ala Moana Blvd., Room 3-122
Honolulu, HI 96850-0056

Dear Dr. Mehroff:

The National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) is planning to prepare a Programmatic Environmental Impact Statement (PEIS) regarding implementation of various research and enhancement activities designed to improve survival of Hawaiian monk seals (HMS) in the Northwestern Hawaiian Islands (NWHI). As you are aware, the NMFS Pacific Islands Regional Office (PIRO) and NMFS Pacific Islands Fisheries Science Center (PIFSC) are responsible for HMS recovery and research 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.).

The PEIS, in compliance with the National Environmental Policy Act (NEPA) (40 CFR Parts 1500-1508), will evaluate potential environmental, social, and economic impacts of implementing a range of research and enhancement activities stipulated in the HMS Recovery Plan (2007) to address low juvenile seal survival in the NWHI. As you know, low survival to reproductive age in the NWHI has been identified as a main factor driving the current steep HMS population decline.

Given the jurisdiction of USFWS within the proposed project area (the NWHI) and your agency's technical expertise regarding much of the subject matter to be covered in the PEIS, we are inviting your agency to participate as a cooperating agency on the proposed action pursuant to the Council on Environmental Quality's Regulations for Implementing NEPA (40 CFR 1501.6).

Should USFWS decide to work with NMFS as a cooprating agency, we suggest that we meet to discuss developing an MOU to deliniate our respective roles and responsibilities. Should you decide not to serve as a cooperating agency, please know that we will include USFWS in all of the public information gathering processes undetaken during the PEIS preparation. Regardless of your decision regarding this invitation, we look forward to continuing our coordination with USFWS on HMS recovery and research activities in the NWHI as co-trustees of the Papahanaumokuakea Marine National Monument.

We would appreciate being notified of your decision regarding this invitation on or before October 8, 2010. If you have any questions or would like to meet to discuss this request, please contact Jeff Walters, our Hawaiian monk seal recovery coordinator, at (808) 944-2235, or via email at jeff.walters@noaa.gov.

Sincerely,

Michael D. Tosatto
Acting Regional Administrator

cc: Barry Stieglitz, USFWS, Hawaiian and Pacific Islands NWR Complex

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
1601 Kapiolani Blvd., Suite 1110
Honolulu, Hawaii 96814-4700
(808) 944-2200 • Fax (808) 973-2941

SEP 14 2010

Barry Stieglitz
Project leader
Hawaiian and Pacific Islands National Wildlife Refuge Complex
Fish and Wildlife Service
300 Ala Moana Blvd., Room 5-231
Honolulu, HI 96850-0056

Dear Mr. Stieglitz:

The National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) is planning to prepare a Programmatic Environmental Impact Statement (PEIS) regarding implementation of various research and enhancement activities designed to improve survival of Hawaiian monk seals (HMS) in the Northwestern Hawaiian Islands (NWHI). As you are aware, the NMFS Pacific Islands Regional Office (PIRO) and NMFS Pacific Islands Fisheries Science Center (PIFSC) are responsible for HMS recovery and research 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.).

The PEIS, in compliance with the National Environmental Policy Act (NEPA) (40 CFR Parts 1500-1508), will evaluate potential environmental, social, and economic impacts of implementing a range of research and enhancement activities stipulated in the HMS Recovery Plan (2007) to address low juvenile seal survival in the NWHI. As you know, low survival to reproductive age in the NWHI has been identified as a main factor driving the current steep HMS population decline.

Given the jurisdiction of USFWS within the proposed project area (the NWHI) and your agency's technical expertise regarding much of the subject matter to be covered in the PEIS, we are inviting your agency to participate as a cooperating agency on the proposed action pursuant to the Council on Environmental Quality's Regulations for Implementing NEPA (40 CFR 1501.6).

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We would appreciate being notified of your decision regarding this invitation on or before October 8, 2010. If you have any questions or would like to meet to discuss this request, please contact Jeff Walters, our Hawaiian monk seal recovery coordinator, at (808) 944-2235, or via email at jeff.walters@noaa.gov.

Sincerely,

Michael D. Tosatto
Acting Regional Administrator

cc: Loyal Mehrfoff, USFWS, Pacific Islands Ecological Services

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
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Pacific Islands Regional Office
1601 Kapiolani Blvd., Suite 1110
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(808) 944-2200 • Fax (808) 973-2941

SEP 14 2010

Ms. Laura H. Thielen
Chairperson
Department of Land and Natural Resources
1151 Punchbowl St.
Honolulu, HI 96813

Dear Ms. Thielen:

The National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (NMFS) is planning to prepare a Programmatic Environmental Impact Statement (PEIS) regarding implementation of various research and enhancement activities designed to improve survival of Hawaiian monk seals (HMS) in the Northwestern Hawaiian Islands (NWHI). As you are aware, the NMFS Pacific Islands Regional Office (PIRO) and NMFS Pacific Islands Fisheries Science Center (PIFSC) are responsible for HMS recovery and research 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.).

The PEIS, in compliance with the National Environmental Policy Act (NEPA) (40 CFR Parts 1500-1508), will evaluate potential environmental, social, and economic impacts of implementing a range of research and enhancement activities stipulated in the HMS Recovery Plan (2007) to address low juvenile seal survival in the NWHI. As you know, low survival to reproductive age in the NWHI has been identified as a main factor driving the current steep HMS population decline.

Given the jurisdiction of DLNR within the proposed project area (the NWHI) and your agency's technical expertise regarding much of the subject matter to be covered in the PEIS, we are inviting your agency to participate as a cooperating agency on the proposed action pursuant to the Council on Environmental Quality's Regulations for Implementing NEPA (40 CFR 1501.6).

Should DLNR decide to work with NMFS as a cooprating agency, we suggest that we meet to discuss developing an MOU to deliniate our respective roles and responsibilities. Should you decide not to serve as a cooperating agency, please know that we will include DLNR in all of the public information gathering processes undetaken during the PEIS preparation. Regardless of your decision regarding this invitation, we look forward to continuing our coordination with DLNR on HMS recovery and research activities in the NWHI as co-trustees of the Papahanaumokuakea Marine National Monument.

We would appreciate being notified of your decision regarding this invitation on or before October 8, 2010. If you have any questions or would like to meet to discuss this request, please contact Jeff Walters, our Hawaiian monk seal recovery coordinator, at (808) 944-2235, or via email at jeff.walters@noaa.gov.

Sincerely,

Michael D. Tosatto
Acting Regional Administrator

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Hawaiian and Pacific Islands National Wildlife Refuge Complex
300 Ala Moana Boulevard, Room 5-231
Box 50167
Honolulu, Hawaii 96850

TAKE PRIDE IN AMERICA

October 5, 2010

Michael D. Tosatto
Acting Regional Administrator
Pacific Islands Regional Office
National Marine Fisheries Service
1601 Kapiolani Blvd., Suite 1110
Honolulu, Hawaii 96814-4700

Dear Mr. Tosatto:

Thank you for your letter dated September 14, 2010, regarding an invitation to participate as a cooperating agency on the preparation of the Programmatic Environmental Impact Statement (PEIS) to improve the survivability of the Hawaiian monk seal (HMS). The Hawaiian and Pacific Islands National Wildlife Refuge Complex recognizes the importance of this National Environmental Policy Act (NEPA) action to evaluate potential environmental, social, and economic impacts of implementing a range of research and enhancement activities identified in the HMS Recovery Plan (2007) to address low juvenile seal survival in the Northwestern Hawaiian Islands. On behalf of the Fish and Wildlife Service (FWS), we accept your invitation to participate in the preparation of this PEIS as a cooperating agency in accordance with NEPA regulations and procedures.

Based on FWS legally mandated management responsibilities and technical expertise associated with protecting, conserving, and, where appropriate, restoring fish, wildlife and plants and their habitats within the Hawaiian Islands and Midway Atoll National Wildlife Refuges, we look forward to working together with you on this PEIS. We also support your suggestion to develop a Memorandum of Understanding to delineate our respective roles and responsibilities.

I would also like to take this opportunity to introduce you to Mr. Thomas R. Edgerton, who will be arriving in Honolulu on November 8, 2010, to fill the currently vacant FWS Superintendent position for the Papahānaumokuākea Marine National Monument. Tom will be your point of contact for this cooperative effort and will also be replacing Ms. Susan White as the Fish and Wildlife Service member of the Hawaiian Monk Seal Recovery Team.

If you have additional questions or need assistance prior to Tom's arrival, please contact Ray Born, our Acting Superintendent, at 808.742.9488 or via email at Ray_Born@fws.gov.

Sincerely,

Barry W. Stieglitz
Project Leader

Cc: Loyal Mehrhoff, USFWS, Pacific Islands Ecological Services

Appendix C
Drugs Currently Used or Proposed to be Used During Hawaiian Monk Seal Research and Enhancement Activities

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APPENDIX C – DRUGS CURRENTLY USED OR PROPOSED TO BE USED DURING HAWAIIAN MONK SEAL RESEARCH AND ENHANCEMENT ACTIVITIES

The following table lists the drugs currently used or proposed to be used in Hawaiian monk seals, possible adverse effects including any observed in Hawaiian monk seals, and the pharmacokinetics of each drug (i.e., known information on how the body affects the drug, including how the drug is absorbed, distributed, the rate of action and duration of effect, chemical changes in the body, and effects and routes of excretion of metabolites). Information in the table is from Plumb 2008 or other references if noted. More detailed information on each drug can be found in Plumb 2008.

In addition to the drugs in the table below, supportive fluids such as electrolytes, dextrose, and sodium bicarbonate may be administered at the discretion of the attending veterinarian in response to adverse reactions to capture, handling, and drug administrations. Over the next 10 years, new drugs may become available or other drugs may be prescribed for use in Hawaiian monk seals by the attending veterinarian. Information on such new drugs would be provided by PIFSC to the OPR Permits Division and may be incorporated into the protocols if indicated by the attending veterinarian. Possible adverse effects of any new drugs would be weighed against the benefits of using the drugs for each case. Also, if any of the drugs listed in Table C-1 or any new drugs are used and severe adverse effects are reported in Hawaiian monk seals, the drugs would be discontinued or dosages modified per recommendation by the attending veterinarian.

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Table C-1 Information On Drugs Proposed For Use in Hawaiian Monk Seals During Research and Enhancement Activities

Drug Name	Use in Hawaiian Monk Seals	Possible Adverse Effects	Pharmacokinetics
Atropine Sulfate	To reduce bradycardia (slowed heart rate) or treat cardiac arrest; may be used as a pre-anesthetic to reduce respiratory secretions and block vagal mediated dive reflex.	Generally dose related; mild effects in healthy patients; severe effects with high or toxic doses include gastrointestinal, central nervous system (CNS). Used on numerous occasions in Hawaiian monk seals with no adverse reactions reported (NMFS unpubl. data). Used extensively in other pinnipeds during anesthesia with no observed side effects (Haulena and Heath 2001)	Well absorbed with peak effects on heart rate within 3-4 minutes; metabolized in liver and 30-50% of dose excreted unchanged in urine. Half-life (the time required for the concentration of the drug to reach half of its original value) in humans is 2-3 hours.
Ceftiofur crystalline free acid	Long-acting cephalosporin antibiotic for prophylactic treatment of injuries and treatment of infections.	Usually not serious and low occurrence; mild transient pain and possibility of abscess at injection site; diarrhea; hypersensitivity reactions include rash, fever, or anaphylaxis. Not used in Hawaiian monk seals. No adverse reactions reported after use in humpback whales, California sea lions, northern elephant seals, and harbor seals (Gulland pers. comm.).	Half-life in cattle is 8-12 hours with peak levels after 30-45 minutes of intramuscular (IM) injection. A study at The Marine Mammal Center (Sausalito, CA) on 10 California sea lions resulted in maximum plasma concentrations at 24 hours post-IM injection; plasma drug levels at lower levels would likely be maintained for 5-8 days post-injection (Meegan et al. 2010).
Dexamethasone	A glucocorticoid used for treatment of shock; may be used to treat adrenal insufficiency, inflammation, and other maladies.	Usually associated with long-term administration and manifested as clinical signs of hyperadrenocorticism; can retard growth in young animals; when given short-term, unlikely to cause significant harmful effects, even in massive doses. Few instances of use in Hawaiian monk seals with no adverse reactions reported (NMFS unpubl. data).	Half-life in dogs is 2-5 hours; biologic activity can persist for $\geq$ 48 hours.

Drug Name	Use in Hawaiian Monk Seals	Possible Adverse Effects	Pharmacokinetics
Diazepam	A benzodiazepine used as a sedative (anxiolytic, muscle relaxant, hypnotic) for capture events; may be used as an appetite stimulant or anti-convulsant.	Dogs may exhibit CNS excitement; in horses may cause muscle weakness and ataxia; in cats may cause irritability, depression, aberrant demeanor. Routinely used sedative in Hawaiian monk seals with no adverse reactions reported (NMFS unpubl. data).	Highly lipid soluble and widely distributed throughout the body; readily crosses blood-brain barrier and is highly bound to plasma proteins; metabolized in liver to active metabolites nordiazepam, temazepam, and oxazepam, which are eliminated primarily in urine.
Doxapram HCL	A CNS/respiratory stimulant used to treat respiratory arrest; may also be administered during/after anesthesia.	Hypertension, arrhythmias, seizures, and hyperventilation, which are most probable with repeated or high doses. Increases myocardial oxygen demand and reduces cerebral blood flow. Few instances of use in Hawaiian monk seals with no adverse reactions recorded (NMFS unpubl. data).	After intravenous (IV) injection, onset of effect in humans and animals within 2 minutes; in dogs, rapidly metabolized and excreted as metabolites in urine within 24-48 hours after administration. Serum half-life in dogs is 2.5-3.2 hours and in humans is 20-50 hours.
Emodepside + Praziquantel	Topical antiparasitic (nematocide + cetocide) used to treat intestinal roundworms and tapeworms.	Most common side effects in cats include skin and gastrointestinal reactions. Two instances of use in captive Hawaiian monk seals with no adverse reactions recorded (Permit No. 10137-06 modification request).	In cats: rapidly absorbed through skin and into systemic circulation after dermal administration; serum concentrations detectable for praziquantel after 1 hour (peak at 6 hours) and for emodepside after 2 hours (peak at 2 days); detectable for up to 28 days following administration.
Epinephrine	Treatment for cardiac arrest with resuscitation; may also be used to treat anaphylaxis.	Can induce feelings of fear or anxiety, tremor, excitability, vomiting, hypertension (with overdose), arrhythimias, high levels of uric acid in blood, and lactic acidosis (with prolonged use or overdosage). Few instances of use in Hawaiian monk seals with no adverse reactions reported (NMFS unpubl. data).	Well absorbed following IM or subcutaneous (SC) injection; onset of action following SC injection is 5-10 minutes; immediate action following IV injection; does not cross blood-brain barrier; actions end by uptake into sympathetic nerve endings; metabolism in liver and other tissues to inactive metabolites.
Fenbendazole	An antiparasitic agent for treating intestinal	Generally no adverse effects at normal doses; hypersensitivity secondary to antigen release by dying parasites may occur, especially with high doses; vomiting	Marginally absorbed after oral administration; metabolized to active compound oxfendazole and sulfone; in sheep, cattle, and pigs, 44-50%

Drug Name	Use in Hawaiian Monk Seals	Possible Adverse Effects	Pharmacokinetics
	roundworms.	reported infrequently in dogs and cats ; well tolerated at doses up to 100x recommended. Used in research field trial in Hawaiian monk seals and in captive care; no adverse effects reported from use but difficult to administer orally in field setting (NMFS Permit No. 10137 Hawaiian Monk Seal Deworming Project: Year One Summary).	of a dose is excreted unchanged in feces, and <1% in urine.
Flumazenil	A benzodiazepine antagonist used to reverse effects of sedative overdose (diazepam or midazolam).	In humans, injection site reactions, vomiting, cutaneous vasodilatation, vertigo, ataxia, and blurred vision; deaths have been associated with its use in humans having serious underlying diseases; large IV overdoses have rarely caused symptoms in otherwise healthy humans. Used in Hawaiian monk seals with no adverse reactions reported; trials with captive monk seals proved effective in reversing effects of midazolam (NMFS unpubl. data).	Administered with rapid IV injection with therapeutic effects within 1-2 minutes; rapidly distributed and metabolized in liver; half-life in humans is approximately 1 hour.
Furosemide	A diuretic used to treat congestive heart failure or pulmonary edema.	May induce fluid and electrolyte imbalances; reported to cause hearing loss in cats and dogs given high IV doses; other effects include gastrointestinal problems, anemia, weakness, restlessness. Few instances of use in Hawaiian monk seals with no adverse reactions reported (NMFS unpubl. data).	In dogs, the elimination half-life is approximately 1-1.5 hours; in humans, the diuretic effect takes place within 5 minutes and peak effects 30 minutes after IV injection.
Ivermectin	An antiparasitic agent for treating intestinal roundworms; used as a heartworm preventative in captive monk seals.	Species-specific adverse effects generally from dying microfilaria or other larva, for example, swelling and itching in horses, shock-like reactions in dogs, and paralysis and staggering in cattle; may cause neurologic toxicity in mice and rats with doses slightly more than prescribed; may cause death, lethargy, or anorexia in birds.	Oral doses absorbed up to 95%; greater bioavailability after SC administration but more rapidly absorbed after oral administration; well distributed to most tissues except in cerebrospinal fluid thus reducing its toxicity; metabolized in liver and primarily excreted in feces; less than 5% is excreted in urine; elimination half-life for dogs is 2 days.

Drug Name	Use in Hawaiian Monk Seals	Possible Adverse Effects	Pharmacokinetics
		Used in captive care of Hawaiian monk seals to treat intestinal worms and used routinely on permanently captive monk seals with no adverse reactions reported (NMFS unpubl. data; Annual Report for Permit No. 455-1760).	
Lidocaine HCL	A local anesthetic used to reduce pain from skin incisions such as blubber biopsies.	At usual doses, serious adverse reactions are rare; most common are dose-related and rare, including CNS reactions, transient nausea and vomiting, and cardiac effects. Routinely used in Hawaiian monk seals during biopsy sampling with no adverse reactions reported (NMFS unpubl. data).	Lidocaine has a high affinity for fat and adipose tissue and is bound to plasma proteins; rapidly metabolized in liver to active metabolites; less than 10% of an injected dose is excreted unchanged in urine.
Midazolam	An injectable benzodiazepine used as a sedative for capture events or as a preanesthetic.	Few adverse effects have been reported in humans including effects on respiratory and cardiac rates and blood pressure; other effects reported in humans include pain on injection, local irritation, headache, nausea, vomiting, and hiccups. Possibility of respiratory depression is principal concern in veterinary patients. Used in captive Hawaiian monk seals with no adverse reactions reported; trials with captive monk seals indicated midazolam safe and effective (NMFS unpubl. data; Annual report for Permit No. 455-1760).	Rapidly and nearly completely absorbed after IM injection; highly protein-bound and rapidly crosses the blood-brain barrier; metabolized in liver; elimination half-life in dogs averages 77 minutes and in humans is approximately 2 hours.
Praziquantel	An anticestodal antiparasitic used to treat intestinal tape worms.	In dogs, oral dosing can cause anorexia, vomiting, lethargy, or diarrhea but incidence is less than 5%; greater incidences from injectable in dogs including pain at injection site, vomiting, drowsiness, and staggering gate. Used in research field trial (oral and IM) and in captive care (oral) of Hawaiian monk seals; no adverse effects reported from oral use in captive care; difficult to	Rapidly and nearly completely absorbed after oral administration; peak serum levels in dogs between 30-120 minutes; distributed throughout the body, crossing intestinal wall and blood-brain barrier into CNS; metabolized in liver and excreted primarily in urine; elimination half-life in dogs is 3 hours.

Drug Name	Use in Hawaiian Monk Seals	Possible Adverse Effects	Pharmacokinetics
		administer orally in field setting; swellings resulted from IM injections in field use (NMFS unpubl. data; Gobush et al. *in prep*).	
Prednisolone sodium succinate	A glucocorticoid used for treatment of shock; may be used to treat adrenal insufficiency and other maladies.	Usually associated with long-term administration and manifested as clinical signs of hyperadrenocorticism; can retard growth in young animals; when given short-term, unlikely to cause significant harmful effects, even in massive doses. Few instances of use in Hawaiian monk seals with no adverse reactions reported (NMFS unpubl. data).	Biologic half-life is 12-36 hours.

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Appendix D
Vaccination Plan Review

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HAWAIIAN MONK SEALS VACCINATION RESEARCH AND RESPONSE PLAN

NATIONAL MARINE FISHERIES SERVICE (NMFS)

BACKGROUND

Epidemic diseases (referred to as epizootics when occurring in animals rather than humans) are diseases that occur at a time or place that they do not usually occur, or with a greater frequency than expected in a certain period. Severe epidemics may reduce host population density to such an extent that stochastic events or previously unimportant ecological factors may further reduce the host population size (Harwood and Hall 1990). For example, canine distemper dramatically reduced black-footed ferret (Mustela nigripes) populations in Wyoming, bringing them to extinction in the wild (Thorne and Williams 1988); and, avian malaria reduced native Hawaiian honeycreeper (Hemignathus parvus) populations to such small numbers that many were finally eliminated by predation or habitat loss (Warner 1968).

Infectious diseases, especially those that are newly introduced to naïve populations of animals, can cause mass illness and mortality. The best means of preventing the spread of infectious disease among animals are vaccinations. Vaccines are available for two viruses that have been identified as high risks to Hawaiian monk seals: morbillivirus and West Nile virus. Background surveys conducted on Hawaiian monk seals support that they remain naïve to both viruses. These two viruses are the current focus of vaccination research and response planning for Hawaiian monk seals.

Morbilliviruses—These viruses, specifically phocine distemper virus (PDV) and canine distemper virus (CDV), have caused mass die offs of phocids. During 1988, approximately 18,000 (70% of the population) harbor seals (Phoca vitulina) in Europe died from PDV infection (Heide-Jørgensen et al. 1992). A second outbreak of PDV occurred in the North Sea in 2002, which killed over 20,000 harbor seals (Jensen et al. 2002). Outbreaks of canine distemper (CDV) killed 5-10,000 Baikal seals (Pusa sibirica) in 1987-1988 (Grachev et al. 1989), 10,000 Caspian seals (P. caspica) in 2000 (Kennedy et al. 2000) and may have been responsible for the deaths of 2,500 crabeater seals (Lobodon carcinophagus) in the Antarctic in 1955 (Laws and Taylor 1957). While a morbillivirus was isolated from Mediterranean monk seals (Monachus monachus) that died during an epidemic, its importance relative to biotoxins in causing mortality remains controversial (Hernandez et al. 1998). While the susceptibility of Hawaiian monk seals to morbilliviruses is unknown, due to the devastating effects these viruses can have on phocids, there is a need to better understand and prepare for such an event in Hawaii.

West Nile Virus—This virus caused the death of a captive monk seal at SeaWorld San Antonio, Texas, and has caused mortality in captive harbor seals in the mainland U.S. To date this virus has not been identified in wild marine mammals, although it is present along the eastern seaboard and southern California. This mosquito-borne virus is currently not present within Hawaii, and the State has rigorous surveillance and response plans for this virus due to its public health importance. Although neither single cases of disease nor epidemics of West Nile Virus have been reported in wild marine mammals to date, the death of a monk seal in Texas from this infection indicates monk seals are susceptible. Thus, the possibility of extensive mortality in monk seals exists if the virus were to be introduced to Hawaii , warranting a response plan to such a scenario.

Available vaccines—Vaccines currently used for prevention of viral diseases in domestic animals can be divided into three types:

- Vaccines based on a dead inactivated virus;
- Vaccines using live attenuated viruses; and
- Vaccines consisting of recombinant viruses.

Vaccines using a dead virus are considered the safest because the virus cannot replicate in the host or cause disease; however, this lack of replication often means that the immune response generated following vaccination is short-lived and may not be protective. Live vaccines typically generate the most effective immune response. When used in species other than the one for which the vaccine was developed, live vaccines present the risk of the virus replicating in the host and either causing disease in the vaccinated animal, or being shed in secretions and becoming infective to in contact animals.

Recombinant virus vaccines use a vector virus that does not typically infect the target host but expresses antigens from the pathogen of interest to stimulate an immune response against it. A recombinant vaccine to CDV (monovalent recombinant canary pox vector expressing canine distemper virus antigens, Purevax, Merial) licensed for use in ferrets in the U.S., is now used extensively in zoological collections (Bronson et al. 2007). It is the only distemper vaccine recommended by the American Association of Zoological Veterinarians for use in non-domestic carnivores including mustelids (http://www.aazv.org). It is approved generically for animal use in the State of Hawaii. Safety and efficacy trials with this CDV vaccine have been conducted on four captive harbor seals and on one captive Hawaiian monk seal. These preliminary studies demonstrated that the vaccine is safe, and antibodies to canary pox were detected after a second (booster) dose. This vaccine has also proven to be a safe and effective prophylactic treatment for captive southern sea otters (Enhydra lutra nereis) (Jessup et al. 2009).

Inactivated West Nile virus vaccine (Innovator, Fort Dodge) has been used regularly to date on Hawaiian monk seals in captivity in San Antonio, Texas, with no adverse reactions observed (Workshop to Evaluate the Potential for Use of Morbillivirus Vaccination in Hawaiian Monk Seals, Final Report 2005).

VACCINE RESEARCH

To prepare for and respond to an epidemic caused by morbilliviruses or West Nile virus, the following research is proposed.

Surveillance for morbillivirus and West Nile infections—To enable detection of novel viral infections in the Hawaiian monk seal population, there is a need to routinely and actively monitor for infections. Monitoring wild monk seals for these viruses may include tests for antibodies against the virus in blood (e.g., enzyme linked immunosorbent assays), tests for actual virus in blood, feces, or nasal swabs (e.g., polymerase catalyzed reaction assays), and syndrome-based surveillance. Sample and data collection for these tests would be conducted in concert with existing population health screening.

Assess the safety and efficacy of the recombinant CDV vaccine—Currently, only one captive Hawaiian monk seal has been vaccinated against morbillivirus. Vaccination of additional Hawaiian monk seals would better elucidate their ability to mount a proper immune response, the number of vaccines (including boosters) needed to generate this response, and the duration of immunity against morbilliviruses. Vaccination of additional captive Hawaiian monk seals will be pursued , and vaccination of future monk seals brought into captive care will be considered for this PEIS.

Outbreak response

Vaccination of monk seals may occur either in response to an outbreak or prophylactically in the absence of disease in Hawaii. NMFS proposes to vaccinate in response to disease outbreaks as diagnosed by a series of triggers described below. If the risk of morbillivirus or West Nile virus epidemics to monk seals changes from the current situation, this approach may be modified.

Morbillivirus

Triggers

Any of the following incidents could trigger implementation of CDV vaccinations in wild Hawaiian monk seals:

- Case of confirmed canine distemper virus in a domestic dog outside quarantine in the main Hawaiian islands;

- Case of morbillivirus in a Hawaiian monk seal diagnosed by histology and immunohistochemistry in a dead animal, or seroconversion with clinical signs of disease in a live animal;
- An Unusual Mortality Event of cetaceans in the Hawaiian Archipelago caused by a morbillivirus; or
- A morbillivirus outbreak outside of Hawaii in the Pacific (for example, on the West Coast of the U.S.).

First occurrence of a trigger

The initial response to any of the first three triggers above would be to vaccinate all accessible monk seals on the island where the trigger occurred. Each seal will be vaccinated with Purevax (Merial, Purevax Ferret Distemper Vaccine; 1 ml of reconstituted vaccine subcutaneously). Administration can be achieved by capture and restraint of the animal or via pole-syringe or hand injection without restraint. A second injection (booster) of the same vaccine will be administered approximately one month after the initial vaccination. Survival, development of antibodies, and potential for viral shedding will be monitored in vaccinated seals. Recapture to sample blood for antibodies and nasal secretions for viral shedding will occur 2-3 months after the second vaccination.

In response to the fourth trigger above (outbreak elsewhere in the Pacific), Hawaiian monk seals would be vaccinated opportunistically throughout the Hawaiian Archipelago when handled for other reasons (e.g., tagging) and, if logistics allow seals to be recaptured for subsequent booster and follow up sampling as described above.

Expanded scope of vaccination

Preparations would be made for broader (up to population-wide) vaccination against morbillivirus should this be deemed prudent (based upon current understanding of safety and efficacy, disease threat, and the best scientific information available regarding advisability of prophylactic vaccination). However, no further vaccination will occur after the initial response (on the island where the trigger occurred) until results of serology and shedding have been obtained, unless further cases of morbillivirus disease occur in other monk seals at locations remote from the initial trigger (i.e., at such a distance that the infections are unlikely to have occurred due to contact with a seal from the initial triggering event).

Future Triggers

Results of the response to the first trigger event will be used to refine responses to subsequent trigger events. In particular, records will be taken on:

- Time between trigger and administration of first and second dose of vaccine;

- Number of seals vaccinated;
- Time required to vaccinate all or most animals on island;
- Age distribution of vaccinated animals; and
- Resightings of vaccinated animals.

These data will be used to develop a model that investigates the effect of response time on outbreak spread. Additional data collected will include the overt body condition and health status of vaccinated animals, observations of short-term reactions to vaccinations, and health status of animals when resighted. Data from serological and blood for antibodies and nasal secretions for viral shedding will also be incorporated into the analysis.

West Nile Virus

Trigger

The following incidents could trigger implementation of West Nile virus vaccinations in wild Hawaiian monk seals:

1. A case of West Nile virus in the Hawaiian Archipelago in humans or wildlife, with activation of the State emergency response for West Nile virus control.

Response

In response to the above, all accessible seals would be vaccinated with West Nile virus vaccine (Innovator, Fort Dodge) on the island where the case occurred. Preparations would also be undertaken for broader (up to population-wide) vaccination against West Nile virus as deemed prudent (again, based upon current understanding of safety and efficacy, disease threat, and the best scientific information available regarding advisability of prophylactic vaccination). Given the proven safety of the current West Nile virus vaccine in Hawaiian monk seals, a broad vaccination program is a realistic approach to protecting against infection.

Potential prophylactic vaccination

The best way to protect Hawaiian monk seals against these viral infections is to vaccinate prior to population-wide exposures. This is especially true if multiple doses of vaccines are required to gain immunity against infections, or if immunity responses take weeks to months to develop. Conversely, vaccines that mount short-term responses against infections or have higher risks of side effects may best be delivered only in the face of population-wide exposures. Based upon the information gained from research and any outbreak response, it will be determined whether prophylactic or solely response-driven vaccinations against morbillivirus and West nile virus are needed.

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Appendix E
Proposed Translocation Plan

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Two-Stage Translocation: A Proposal for Enhancement of the Endangered Hawaiian Monk Seal[1]

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[1] An earlier version of this document was prepared for a Society for Conservation Biology (SCB) blue ribbon panel review of the science supporting two-stage translocation. Some of the comments and suggestions arising from the SCB review (completed 7 February 2011) have been incorporated into the current version of this document. Other suggestions, such as providing a wider range of metrics for evaluating two-stage translocation benefits, were incorporated directly into Chapter 4 of the PEIS.

Context and Scope

The National Marine Fisheries Service (NMFS) is proposing a novel strategy for boosting juvenile Hawaiian monk seal survival. The proposal involves temporarily translocating weaned female pups from subpopulations with relatively low juvenile survival to alternate sites where juvenile survival is much higher, then returning them several years later. The objective is to reduce early mortality of these individuals, which is exceptionally high in the first two years of life and is thought to be the primary factor limiting population recovery. The proposed translocations would ideally preserve sufficient reproductive potential within monk seal subpopulations maintaining the capability for more rapid growth should conditions currently constraining survival eventually relax. Given recent trends for this species (4% annual decline in abundance), this logic is admittedly optimistic, but some improvement in natural survival will surely be required if the species is to avoid extinction.

Current survival rates suggest the most favorable option (purely in terms of demography) would involve temporarily moving seals from the remote Northwestern Hawaiian Islands (NWHI) to the main Hawaiian Islands (MHI), an initiative that would undoubtedly involve some controversy related to socio-economic issues. A draft Programmatic Environmental Impact Statement (PEIS) to support this proposal as well as other recovery actions will be completed by Spring 2011.

As described below, the proposed translocation program is but one of several actions, currently underway or proposed, to conserve the Hawaiian monk seal. All of these actions have been, or will soon be, subject to scrutiny for NEPA clearance, MMPA/ESA permitting, IACUC approval, and Recovery Team and Marine Mammal Commission review. Most of these activities have a long history of positive application to monk seals or demonstrated precedent in other wildlife management or conservation programs.

In contrast, the proposed translocation program is novel in many respects and deserves special consideration. Social and economic concerns associated with translocations will be thoroughly analyzed and addressed during the PEIS and permitting processes. However, the PIFSC has further commissioned this special Society for Conservation Biology (SCB) review of the science of its proposed translocation strategy. The PIFSC recognizes that the proposed two-stage translocation program has unique features in terms of its design, execution and underlying scientific principles when compared to 'traditional' translocation or reintroduction programs. As such, the SCB review is intended to evaluate the scientific support for the proposed strategy. While recognizing that the translocation program would occur as one element of a more comprehensive research and enhancement program, the scope of this review is relatively narrowly focused on translocation science.

Background

Distribution and Population Status

The Hawaiian monk seal ranges throughout the entire Hawaiian Archipelago with rare occurrences recorded at Johnston Atoll, approximately 800 km south of Hawaii (Figure 1).

The species is structured in a metapopulation consisting of eight NWHI subpopulations, which together comprise roughly 85% of total abundance; the remainder is distributed amongst the MHI. The monk seal subpopulations display varying degrees of demographic independence but are linked through regional environmental correlation as well as migration (Baker *et al.* 2007, Baker and Thompson 2007, Schultz *et al.,* in press). A proxy for movement rates among subpopulations (the proportion of tagged seals seen at other than their natal site during their lifetime) ranges from 4% to 18% depending upon the site (Schultz *et al.,* in press). Effective migration has apparently been sufficient to preclude any discernable genetic population structure, such that the species is comprised of a single panmictic population (Schultz *et al.* 2009, Schultz *et al.,* in press).

Total Hawaiian monk seal abundance is approximately 1,100 individuals with subpopulations ranging from roughly 50 to 200 seals each. The overall population abundance is falling by an estimated 4% per year. The six most-studied subpopulations in the NWHI (French Frigate Shoals, Laysan Island, Lisianski Island, Pearl and Hermes Reef, Midway Atoll and Kure Atoll) are currently declining with estimated intrinsic rates of increase (λ) ranging from 0.89 to 0.96 (Baker *et al.* in press). Necker and Nihoa Islands appear to be stable or increasing, however the demographics at these two sites are relatively poorly characterized due to their difficult access and historically relatively small contribution to total abundance. In contrast, the MHI population is increasing with an estimated λ of 1.07.

Poor post-weaning juvenile survival is the primary driver of the population decline in the NWHI and, conversely, favorable survival in the MHI contributes to that region's robust growth. Recent survival to age curves (l_x) demonstrate the divergent survival regimes operating between the NWHI and MHI (Figure 2). Chronic poor juvenile survival for time periods ranging from 10-20 years in the NWHI have resulted in degraded age structures exhibiting an over-representation of newborns and older seals, with few juveniles and young adults.

Age-specific fecundity (m_x) has been rather well characterized for three NWHI subpopulations (Harting *et al.* 2007, Figure 3). The curves vary among these sites and tend to be somewhat lower than for other pinnipeds. There is some evidence that MHI seals enjoy earlier maturation and higher reproductive rates, at least among the younger adults (Baker *et al.* in press). Nevertheless, survival rates are the primary factor determining population status and trends at present.

Causes of population decline

The 2007 Recovery Plan for the Hawaiian Monk Seal (NMFS 2007) identified three "crucial" threats to the species:

- **Food limitation,** the primary cause of low juvenile survival.
- **Entanglement** in marine debris, which affects all ages and sexes, but disproportionately involves juvenile seals.

- **Shark predation,** particularly Galapagos shark predation on pups at French Frigate Shoals.

Another set of second tier "serious" threats include infectious disease, terrestrial habitat loss in the NWHI (especially due to sea level rise), intra-specific male aggression, and human interactions especially in the MHI (disturbance, fishery interactions, etc.).

While certain of these threats can have important sporadic or localized impacts (*e.g.*, male aggression) or have *potential* for widespread, devastating impacts (epidemic disease), it is generally agreed that the primary cause of the current decline is food limitation leading to unsustainably high levels of juvenile mortality (Antonelis *et al.* 2006, Baker 2008). Insufficient availability of prey for young seals may be mediated through poor or variable overall system productivity, competition with other top predators (Baker *et al.* 2007, Polovina 2008, Baker and Johanos 2004, Parrish *et al.* 2008), or both. In any case, because the diagnosis indicates a deficiency in the ecosystem that is leading to the demise of young monk seals, there are no simple or certain remedies. Thus, a set of novel tools, including a new translocation approach, is being proposed. Below we describe past, ongoing and future planned interventions to provide some context for the translocation proposal that is the focus of this review.

Past and current enhancement activities

Due to steep declines in abundance following surveys in the late 1950s, the Hawaiian monk seal was listed as endangered under the United States Endangered Species Act (ESA) in 1976. Efforts to monitor the species and foster its recovery began in the early 1980s, led by the NMFS as prescribed by the ESA. Monk seal population assessment has focused on determining abundance, age and sex structures, survival rates, reproductive rates, and causes of injury and mortality. The Hawaiian monk seal thus has the distinction of being the subject of a long-term and thorough demographic study on a par with that undertaken for any large, free-ranging mammal in the world. Relying on the rich data set accumulated from over two decades of research, a suite of demographic parameter estimates has been updated annually for six NWHI subpopulations, with less data available from Necker and Nihoa Islands, and more recently, data from the MHI. Summarized demographic data are typically available for review within a few months after annual field seasons have ended. Further, robust investigations of foraging behavior and monk seal health and disease are ongoing. This rich, two-decade plus research data set is essential for evaluating past recovery efforts and designing future measures. A primary focus of the research program has naturally been to discover and, when possible, mitigate natural and anthropogenic threats to the species.

Future proposed interventions

Despite the many past efforts and those ongoing, the monk seal's status continues to erode. The efforts outlined above have no doubt slowed the species' decline, but it is broadly agreed that more must be done to save the species from further deterioration and ultimately, extinction. Because the primary driver of decline is low juvenile survival, successful interventions must be directed toward the early life stages: pups and juveniles. However, due to the condition of age structures and vital rates in the NWHI as described above, the number of pups available for intervention is projected to rapidly decline (Figure 4). This realization heightens the sense of urgency to begin interventions before the opportunity to effect meaningful improvement expires.

Many past and current efforts will be continued into the foreseeable future as these measures have clear and direct benefits. These include, but are not limited to, disentangling seals caught in marine debris, removing fishing hooks from seals, large-scale removal of potentially entangling marine debris from beaches and reefs, and mitigating Galapagos shark predation and intra-specific male aggression when needed. Some translocations, already authorized, will continue. For example, within-atoll translocation of weaned pups from high shark predation islets to historically safer islets at French Frigate Shoals is a successful tool for mitigating post-weaning Galapagos shark predation. In the MHI, pups that wean in high human-use areas isolated from other seals may also be translocated to more favorable sites when deemed beneficial. Finally, translocation of adult males is one option authorized for mitigating male seal aggression.

The robust Hawaiian monk seal research effort will continue and expand in the future. This program is focused on four broad areas: population monitoring, foraging ecology, health studies and survival enhancement research. The full details of the research program are beyond the scope of this document, but it is important to recognize that each element of research inquiry is integrated into the goal of species' conservation. Investigations serve to identify threats, characterize underlying factors that influence survival and reproduction, design interventions, and evaluate the success of conservation measures.

Coupled with the research program is an expanding management effort, primarily focused on the MHI. The management program, led by the NMFS Pacific Islands Regional Office entails stranding response, public outreach and education, and legal/regulatory issues.

Another anticipated expansion is in the area of captive care of monk seals. In collaboration with the Marine Mammal Center in Sausalito, NMFS is pursuing expanded capacity for captive care facilities. Care would be provided to seals brought into temporary captivity under the authority of the NMFS Marine Mammal Health and Stranding Response Program. Captive care efforts would be limited to animals deemed in need of medical intervention.

In addition to the foregoing measures, a set of new research and enhancement tools is under consideration to promote recovery of the Hawaiian monk seal. These include:

- Two-stage translocation
- De-worming
- Vaccination research
- Behavioral modification

The proposed two-stage translocation program is the subject of this paper and SCB review, however the other three initiatives will be described briefly.

De-worming is currently being investigated as a means for improving free-ranging juvenile seal survival by temporarily reducing gastrointestinal parasite burden. If this approach is determined to be feasible and effective, it may be used as an enhancement tool.

Vaccination research is meant to address potential disease (*e.g.*, morbilliviruses and West Nile Virus) outbreaks that could devastate Hawaiian monk seals. If the safety and efficacy of specific vaccines are established, then these could be used either prophylactically or as a response tool to contain an outbreak.

Behavioral modification research addresses a range of measures primarily intended to prevent or mitigate human-seal interactions. Occasionally seals become socialized to humans in the MHI and because of the dangerous nature of their interactions with people, these seals have typically been translocated from the MHI or brought into permanent captivity. Seals also interact with fishers, sometimes to the detriment of the former (hooking, entanglement, shooting) and the latter (loss of catch, damaged gear). Tools to prevent or alter such behavior will be in greater demand as the MHI monk seal population continues to grow. As the tools and protocols for effective behavior modification are refined, they will become an integral component of monk seal management in the MHI.

Two-stage Translocation

Basic concepts

According to the "IUCN Guidelines for Reintroduction", translocation is defined as *"deliberate and mediated movement of wild individuals or populations from one part of their range to another"* (IUCN 1998). Translocation has proven to be one of several useful tools in the Hawaiian monk seal conservation effort (Baker *et al.* in review). The NMFS is proposing a novel approach to further apply translocation to enhance the Hawaiian monk seal population. Translocating individuals would have one or more of the following objectives:

1) Increase individual fitness (especially survival).
2) Improve the species status (*e.g.*, abundance, population reproductive value).
3) Maintain meta-population structure for long-term resiliency.

The fundamental concept underlying application of translocation is to address mismatches between local environmental conditions and distribution of seals among subpopulations. For example, some pups wean at subpopulations where they experience high mortality,

apparently largely due to insufficient prey resources. Thus, many of these neonates perish, whereas, because of spatial variability among sites, they might have survived elsewhere. This would be tolerable under different conditions. That is, if the monk seal population were large and if mean environmental conditions were more favorable (although still punctuated with periods of unfavorable conditions), the meta-population might achieve a sort of dynamic stability across the entire range. The current situation, however, is not sustainable because the number of monk seals is perilously low and steadily declining. Further, adverse conditions have largely prevailed for a decade or more, and natural dispersal occurs at far too slow a rate to effect a more optimal distribution.

Translocation, then, is a tool that could mitigate population decline by accelerating dispersal of young animals from areas of low survival (referred to as "donor" or "natal" sites) to areas of higher survival (referred to as "recipient" or "nursery" sites). This approach could achieve objectives 1 and 2 above. Nonetheless, if translocations are conducted at an appropriate scale for a sufficient number of years, some potentially negative consequences must be addressed. For example, donor populations may become unacceptably depleted or exhibit skewed sex ratios (as only females will be selected for translocation). Moreover, moving too many seals to recipient sites might result in overcrowding and adversely impact vital rates. For these reasons, some translocation measures will also be taken to achieve objective 3 above.

The proposed two-stage translocation approach is illustrated by the following. The NMFS Pacific Islands Fisheries Science Center (PIFSC) currently holds a permit to translocate weaned pups among NWHI subpopulations to improve their probability of survival. Unfortunately, all the primary NWHI subpopulations are experiencing relatively low juvenile survival (Figure 2) such that the potential efficacy of translocation amongst those subpopulations is uncertain. However, present conditions are favorable in the MHI, suggesting that the greatest positive effects of translocation could be achieved by moving weaned pups from the NWHI to the MHI. While juvenile survival in the NWHI is low, those seals that reach adulthood enjoy survival rates comparable to those in the MHI (Baker and Thompson 2007; Baker *et al.* in press). Thus, at present, the most effective scenario would likely involve moving weaned female pups from NWHI subpopulations to the MHI in order to increase the proportion surviving (first stage of translocation). Subsequently, animals that have achieved adult survival rate levels (*i.e.*, age 3 yr and older, following Baker and Thompson 2007 and Baker *et al.* in press) would be returned from the MHI to their natal NWHI subpopulations (second stage translocations). The latter action will serve to rebalance population distribution to avoid excessive depletion of donor subpopulations, ensure the MHI does not become over-populated, and prevent problems associated with male-biased sex ratios at donor sites. Further, should environmental conditions become more favorable in the future, this return translocation would serve to fortify subpopulation age structures, positioning them to exploit improved conditions and achieve positive growth. Without the second stage of the translocation process, donor subpopulations would likely become sufficiently depleted from prolonged low recruitment that population growth would be very slow, even in newly favorable environmental conditions.

It must be emphasized that while the preceding translocation scenario (*i.e.*, NWHI to MHI and return) is suggested by current conditions, future conditions may well dictate other approaches. For example, when juvenile survival is sufficiently high at any NWHI subpopulation, these NWHI subpopulations might be considered for receipt of translocated weaned pups. Likewise, if MHI conditions deteriorate significantly in the future, moving weaned pups from the MHI to the NWHI might be beneficial. Thus, it is critical to underscore that while the underlying translocation strategy is consistent, the particulars will necessarily be adaptive in accordance with prevailing monk seal demographics and environmental conditions. Furthermore, the realized success of translocations is uncertain. Because of the dynamic state of the system and the uncertainty of outcomes, the translocation program would be guided by a complex and adaptive decision framework.

Genetic considerations

Strong genetic population structure can imply local adaptation across a species' range. When planning translocations in such a context, the risk of diluting local adaptation is of critical importance. In contrast, the Hawaiian monk seal's lack of population structure coupled with observed levels of natural movement amongst subpopulations indicate that translocations may be conducted without fear of genetic consequences (Schultz *et al.* in press).

Decision framework

A host of complex and interacting issues arise from three fundamental features of the proposed translocation program:

1) The program will, by design, occur over a span of several years.
2) Environmental and, perhaps in smaller subpopulations, demographic stochasticity lead to variable and unpredictable monk seal survival rates over time and space.
3) This is a novel recovery strategy the outcomes of which are uncertain, and there is potential for unintended (including undesirable) outcomes.

The remainder of this document focuses on the design, execution, and evaluation of two-stage translocation supported by a decision framework and simulation modeling. The decision framework and modeling reflect an attempt to consider all relevant inputs to inform actions and foresee and minimize the risks of undesirable translocation outcomes.

The critical importance of the accumulated monk seal demographic database and the continued stream of annual monitoring data cannot be over-emphasized. Existing survival and age/sex structure information will be the primary basis for determining when to conduct translocations and between which subpopulations. Continued monitoring of both translocated and non-translocated individuals will provide the basis for project evaluation, informing the subsequent steps and reducing uncertainties of simulations.

The skeleton of the decision framework is depicted in two flow charts, one for each stage of translocation (Figure 5). A narrative follows, which travels through each step in the flow

charts. Next, explicit risks of undesirable outcomes are described and components of the decision framework that mitigate those risks are presented.

Translocation of weaned female pups (Figure 5a)

The flow charts in Figure 5 are color-coded to help illustrate the decision-making process. Green boxes represent decision points or actions that progress toward translocation, whereas orange boxes indicate circumstances where translocations are suspended. Yellow boxes represent information inputs that influence decisions. Lastly, red numbers serve as references for orienting the following narrative with the chart.

Step 1 (in Figure 5a) is to evaluate whether there is a "substantial and consistent" difference in juvenile survival between at least two subpopulations. This indeed is the primary motivator for the entire translocation scheme. The two elements of this evaluation, "substantial" and "consistent" require further explication.

The magnitude of the difference in survival suggests a maximum expected benefit that could be conferred by translocation. For example, if survival for a given age class at two hypothetical subpopulations were 0.30 at site *a* and 0.70 at site *b*, then at best we could anticipate a 0.40 (0.70-0.30) improvement in the survival of seals moved from site *a* to *b*. The greater the survival differential, the more compelling the case is for translocation. However, establishing a concrete threshold for when translocation is worth doing is problematic, because we have insufficient experience with this intervention approach to reliably anticipate outcomes. Nevertheless, we require some guidelines to begin with, which will be refined as experience accumulates. The earliest age when translocations might occur is at weaning, and monk seals tend to achieve adult survival rates at approximately age 3 yr. Thus, an appropriate period for comparing survival amongst subpopulations is from weaning to age 3 yr. Initially, we will examine survival for this period among subpopulations but not hold to thresholds, which would be arbitrary if established *a priori*. While it could be argued that any improvement in survival is valuable, no matter how small, potential decrements to survival associated with translocation (see simulation modeling section) might subtract from the expected benefits of being placed in a more favorable environment. For initial trials the survival differential will be sufficiently large to allow the potential for considerable survival decrements to translocated seals without the action causing harm (*i.e.*, improvements should exceed decrements).

The concept that differential survival should be consistent before translocation is warranted arises from the observation that juvenile monk seal survival rates are notoriously variable among sites and from year to year. Previous analysis has shown that there is only weak autocorrelation in first year survival between years, such that poor survival in one year does not provide much predictive power about the next cohort's survival prospects (Baker and Littnan 2008). Not only do survival rates fluctuate, but estimates have associated error, in part because the cohort size at individual sites can be very low. In order to avoid having our translocation decisions constantly chasing last year's rates, we propose evaluating survival differential using the most recent available three

years at each site. As with the magnitude threshold, this approach will be refined as information on outcomes is collected.

Thus, in Step 1, using the stochastic simulation model described in subsequent sections, we evaluate whether there is a sufficient differential in survival from weaning to age 3 yr measured over the past three years among subpopulations. If not, then continued monitoring of vital rates (**Step 2**) is prescribed. If yes, then we proceed to **Step 3**.

At **Step 3**, we ask whether the project has been ongoing for at least 3 years. If not, there are not yet any candidates for the return translocations, so we proceed directly to **Step 6**. However, if the project has been conducted for at least 3 years, we evaluate **Step 4**, whether return translocations of 3+ yr-old seals previously moved as weanlings are occurring as planned. Examples of conditions which might result in failure to return 3+ year olds as planned would be an emerging concern about a pathogen affecting either subpopulation, unanticipated logistical problems or other factors as described below. If seals are not being returned as planned, then weaned pup translocations are suspended (**Step 5**) until whatever is impeding return translocations is resolved. This decision is intended to both avoid overloading a recipient site with immigrants and preventing over-depletion and sex ratio imbalance at donor sites that are not being replenished.

At **Step 6**, the donor and recipient subpopulations are determined. This will typically be a simple matter of selecting the two sites with the lowest and highest survival, respectively. However, there may be cases where more than one site has similarly low or high survival, such that weaned pups could be drawn from or delivered to more than one site. As in Step 1, simulation modeling will be conducted to evaluate expected benefits associated with selecting various combinations of donor and recipient sites. If weaned pups have been translocated to the proposed recipient site in recent years, the survival performance of the former translocatees will inform this decision.

Step 7 is a critical juncture where the number of seals to be translocated is determined. This decision is influenced by numerous factors indicated by the yellow boxes. The *smallest* number indicated by any of these factors should be the *maximum* number considered for translocation. For example, the "number of weaned female pups in healthy condition" at the prospective donor site sets a clear upper bound on the potential number available for translocation. Likewise, logistical constraints (ship deck space, ship availability, funding, etc.) might also limit the number that can be translocated. Further, the number deemed prudent to translocate in any one year may be influenced by societal factors (especially in the MHI). Regardless, when the program is new, it will be prudent to start small with approximately 5 weaned pups, gradually increasing to at most 10 per year in the first several years. Finally, the capacity for the prospective recipient sites(s) to absorb a cadre of additional weaned pups must be considered. This will largely be assessed by evaluating trends in juvenile survival. For example, first year survival post-weaning appears to be sensitive to worsening conditions. Thus, if a trend towards deteriorating survival is observed, this would suggest translocating fewer numbers of new pups. Lastly, social factors (public attitudes) may indicate that receiving sites within the MHI can absorb fewer additional seals than might be concluded on biological grounds alone.

Once the target number is determined, seals will be captured at their natal sites (**Step 8**) and screened for a variety of health parameters including indications of infectious disease (**Step 9**). Health screening protocols evolve with techniques and perceived potential for specific diseases. However, PIFSC has established protocols for health screening translocated weaned pups, which are periodically reviewed and which have been applied as recently as 2009. Seals which do not pass the health screen will either remain at liberty at the natal site or will be brought into captive care if deemed in need of medical attention (**Step 10**). Those that pass the health screen will be transported to their destination, released, and closely monitored (initially with telemetry) (**Step 11**). Past experience has shown that direct release of weaned pups in appropriate habitat (*i.e.*, at sites where other pups have previously been weaned and survived) is a successful strategy (Baker *et al.* in review).

Translocation of seals age 3 yr and older (Figure 5b)

The second stage of the proposed translocation involves repatriation of seals, previously translocated as weaned pups, which have achieved adult survival rates (3+ yr-olds). Figure 5b depicts the flow chart for this process, with color-coding and notation conforming to that in Figure 5a.

Step 1 is reached when translocations have occurred three years or more previously, so that there are potential translocatees available for repatriation. At **Step 2**, we assess whether the survival prospects for adults in the seals' natal region are roughly as high or higher than in the current location. The reasoning here is that while juvenile survival varies greatly among subpopulations, adult rates tend to be more similar and less variable. For example, although juvenile survival is currently much lower in the NWHI than in the MHI (Figure 2), adult survival in the NWHI is comparable or just slightly lower than that in the MHI (Baker *et al.* in press). Thus, the two-stage translocation effectively protects subjects from the high mortality they would have otherwise experienced as juveniles in their natal regions, and returns them at an age when they will likely experience relatively high survival. The two translocations, then, confer a net benefit on translocatees even if they experience slightly lower survival as adults when repatriated in their natal regions. The expected magnitude of this net benefit will be assessed using simulation modeling as described in subsequent sections.

Alternatively, if adult survival at the natal region is considerably lower, then return translocations would be suspended (**Step 3**) and additional weaned pup translocations from the donor population in question would also cease (see Figure 5a, **Step 5**). It is conceivable that in rare cases other factors might provide a compelling incentive for translocating 3+ yr old seals even if adult survival at the natal site is sub-optimal. For example, addressing an imbalanced sex ratio or some other deficit might influence the disposition of these young female seals. If adult survival at the natal region remains comparable to, or higher than, the current location, we proceed down the path to return previous translocatees to their natal region (**Step 4**). The number of age 3+ yr-olds to

return is simply determined as the number of surviving previously translocated weaned pups (**Step 5**).

The next important decision is to confirm that returning seals to the site of origin is indeed appropriate and prudent at the present time (**Step 6**). This deliberation is influenced by multiple factors (yellow boxes). For example, if seals have been returned in previous years, the survival performance of those earlier returnees will be considered before additional seals are repatriated. More broadly, the capacity of the natal region to absorb returnees will be assessed as indicated by survival rates of all ages at the site, as well as current abundance relative to historical levels. Disease risk is another consideration. If a known disease is present at the natal subpopulation, but is absent from the seals' current location, then it would not be appropriate to expose returnees and thus risk their survival. If it is deemed inadvisable to return seals to the preferred (natal) location, then an alternate nearby location may be chosen, so long as that location is deemed prudent according to the above criteria. Finally, male-biased sex ratios have led to male aggression-related mortality in the past, and interventions to adjust sex ratio have successfully lowered this threat (Johanos *et al.* 2010). Thus, there may be cases where returning seals to a site, not necessarily their birth location, could be used to ameliorate male-biased sex ratios. If no appropriate release location is identified, then return translocations of 3+ yr-olds will be suspended (**Step 3**).

Once the release location(s) have been confirmed, the subject seals will be brought into captivity (**Step 7**, *in situ* pens/cages in the NWHI; permanent captive facilities in the MHI). At this point, the seals will be health screened as described above and also held in quarantine for a prescribed period; likely approximately two weeks, depending upon veterinary protocols to be developed (**Step 8**). The primary purpose of quarantine is to confirm absence of active disease and minimize the chance of transmitting a disease into a return site where that disease may be absent. The quarantine period may be shortened when moving animals between subpopulations where disease surveillance indicates that the prevalence of exposure to a suite of pathogens is equivalent. Quarantine is expected to be most important when moving seals from the MHI to the NWHI, as some diseases may occur in the former region but not the latter because of the presence of feral and domesticated animals in the MHI.

Seals which fail to pass the health screen or quarantine will be released at the capture site or brought into captive care if appropriate (**Step 9**). Otherwise, they will be transported, released and closely monitored (initially with telemetry)(**Step 10**).

Minimizing risk of undesirable outcomes

A variety of risks are inherent in any intervention in wild populations, including the proposed two-stage translocation. Risk minimization will be achieved through program design, intensive monitoring and evaluation, and the adaptive decision framework described above. Below, we address how the risk of an extensive list of conceivable potential ill effects will be minimized.

Table E-1. Risks and concerns that may affect the outcome and evaluation of two-stage translocations in Hawaiian monk seals.

Issue	Risk or Concern	Mitigating Factors
Condition of weaned pups (*e.g.*, axillary girth), is positively related to survival prospects.	Selection of weaned pups for translocation may not be representative (i.e only viable, healthy pups will be selected), so that project evaluation may be difficult.	Small, but otherwise healthy pups will not be excluded from translocation. Only non-viable, emaciated or wounded animals will be avoided. Post-hoc analysis will control for condition of both translocated and non-translocated pups.
Depletion of donor subpopulations.	If weaned pups are continuously taken from a site, abundance may fall to an unacceptably low level, with the potential that: i) Seals no longer play a "functional" role in the system. ii) Competitors may occupy the monk seal niche and inhibit population re-establishment. iii) "Empty" environment could be a wasted opportunity for growth if intra-specific competition is low.	Depletion should only be short-term and moderate because 3+ yr-olds will be returned to the donor population. This, in fact, should increase rather than deplete the donor population after return translocations commence. Moreover, should intra-specific competition lessen at the donor site, juvenile survival should consequently increase. This will reduce the survival differential between sites and automatically regulate further weaned pup translocations.
Development of male-biased sex ratios	Removal of female pups will eventually manifest in male-biased sex ratios, leading to increased male aggression toward adult females and juveniles.	Weaned female pups will be returned to natal sites prior to sexual maturity. Presumably they will have enjoyed higher survival than (non-translocated) males. Ultimately, the two-stage translocation should result in some female bias for effected cohorts. If in fact the translocated females fare poorer than their male counterparts or cannot be repatriated for any reason, weaned pup translocations would be suspended as described in the decision framework. This could result in male bias for a few affected cohorts, but this would be a small portion of the total population.
Capacity of recipient site to absorb immigrants.	Overshooting carrying capacity could lead to a crash of the recipient population.	Recipient site demographics will be closely monitored, especially for declining juvenile survival. If this is observed, the differential survival between donor and recipient sites decreases, so that translocations slow or cease, thus correcting the problem.
Translocated seal survival	Weaned pups taken from their natal sites may not fare as well as natives at their host site. Returned 3+ yr-old returnees may not survive as well as those who have survived from birth at their natal site.	Past experience (Baker *et al.* in review) has shown that recently weaned pups are amenable to translocation and have survival rates indistinguishable from pups born at release sites. Sites where pups have been weaned and survived will be selected as release locations for weaned translocation pups. Experience translocating seals around 3 years of age is limited. Repatriates to their

		natal regions may have both disadvantages and advantages relative those that have grown up there. Three-year-old seals may experience greater effect of capture stress than has been the case with weaned pups. Returnees may be disadvantaged by having to learn to forage in a new area, which may have less prey availability than where they grew up. However, because returnees spent their first 3 years in more favorable habitat, their body condition should be better than non-translocated seals in their natal region, thus providing a survival advantage. In both cases (weaned pups and returnees), survival will be monitored and translocation plans appropriately adapted as described in the decision framework.
Infectious disease	Translocating seals may result in spreading disease faster than would occur naturally.	Health screening of all translocated seals, coupled with appropriate quarantine of returnees will minimize risk of transporting infectious agents. Moreover, disease surveillance will be ongoing throughout the species range to detect emerging disease outbreaks. At present, there does not appear to be strong differences in exposure throughout the range, perhaps with the exception of some diseases (leptospirosis, toxoplasmosis) more prevalent in the MHI than the NWHI.

Simulations to evaluate benefits from two-stage translocations

Model Design

The monk seal stochastic simulation model was used to compare and evaluate the expected outcomes from a representative set of translocation scenarios. Details of the model structure and mechanics are provided in Harting (2002) and only the fundamental features are described here. At its core, the model is a mechanistic, stochastic, metapopulation model with provisions for handling uncertainties in input parameters and modeled processes. The model is heavily data driven, capitalizing on the demographic and life history data collected over more than two decades in the NWHI and, more recently, the incipient demographic data set for the MHI. Necker and Nihoa Islands (NWHI) are relatively data poor and have historically comprised a small portion of total abundance, and are therefore not included in simulations. The model provides multiple options for simulating natural perturbations (survival catastrophes, birth catastrophes, shark predation, and aggressive male interactions) and management interventions (captive rearing/release, translocations, shark removals, and other). It produces a diverse array of outputs suitable for evaluating simulation outcomes including abundance, realized growth rate, multiple demographic descriptors, and assorted metrics specific to whatever

intervention scenario was executed. The primary output is site-specific, with summary diagnostics for the entire system and the two main regions (NWHI and MHI).

For the purposes of this analysis, certain model components were disabled, including the option for density dependent adjustment of demographic rates. While that feature of the model is certainly important when performing long-term projections, the precise manner in which density dependence operates on the monk seal population is unknown and its influence can overwhelm and obscure the effects of all other factors included in the simulation scenario.

For the NWHI, age-specific survival rates used for model input were derived from fitting the Siler survivorship curve to observed rates from the most recent three data years. Separate curves were fit for each of the 6 sites. For the simulations, parameter uncertainty was handled by random sampling Siler parameters from the variance/covariance matrix from the parameter fitting. Age-specific reproductive rates were estimated from pooling pupping data from 1990 to the present using methods described in Harting *et al*. (2007). As with survival rates, parameter uncertainty was handled by randomly sampling a unique set of correlated parameters from the fitted distributions. In the model, survival and reproduction are determined stochastically for each individual in the population by binomial sampling (testing a uniform random number in the range [0,1] against the age-specific survival rate). Migration is also determined stochastically for each individual according to the fitted movement rate for each age class. Each simulation was initialized with the most recent starting age/sex distribution for each NWHI site.

As compared to the NWHI, data from which to estimate vital rates and population composition are much more limited for the MHI. A detailed description of the methods used to fit both survival and reproductive rates for the MHI are provided in Baker *et al.* (in press). Where data were lacking (*e.g.*, reproductive rates of older MHI females), some inference and extrapolation was necessary based on patterns observed in the NWHI. Uncertainty in parameter estimates was handled in the same manner as for the NWHI, with unique parameters drawn from their fitted distributions at the start of each simulation.

Translocation Scenarios

As described in the decision framework section of this document, the specific translocation scenario to be undertaken in a given year will be determined according to the most recent data available for each subpopulation. Results from preceding translocation efforts, logistics to accomplish the translocation and other considerations will also enter into the decision-making calculus. In a given year, the optimal translocation scenario might involve any combination of single or multiple donor and nursery sites. Further, the number of seals collected and translocated to each site will vary. It is not our intent to present and evaluate the full complement of translocation scenarios that might be undertaken, but rather to present a small set of representative scenarios that illustrate the salient aspects of this intervention strategy and highlight some of the variables and uncertainties that influence the expected outcome. In practice, prior to initiating an action, additional simulations and ancillary analyses will be undertaken to inform NMFS about the relative benefits that might accrue from various translocation scenarios in a given year.

We present results from nine scenarios. These include one "baseline" scenario that involves no translocation and which serves as the basis of comparison for the other scenarios. This scenario is indicative of what would be expected if current vital rates remain applicable for the duration of the 10-year model projection, and no major perturbations or interventions alter the population trajectory.

The remaining simulations are divided into two sets of four simulations each: one set of cross-region translocations (from French Frigate Shoals (FFS) to MHI), and another set of within-NWHI translocations (FFS to Laysan Island (LAY)). These sites were selected primarily based on the current survival differential of the species' main breeding sites as estimated from the most recent (2010) data. Considering only the NWHI, FFS has consistently had the poorest juvenile survival of any site (l_3 = 0.137), while LAY currently has had much better juvenile survival rates (l_3 = 0.331), although , as with other NWHI sites, LAY has historically demonstrated considerable inter-annual variability (Figure 2). In contrast to all NWHI sites, the MHI has demonstrated the best juvenile survival of any breeding site (l_3 = 0.641).

For all scenarios, we simulated the collection of 10 female pups annually for 5 years at FFS and subsequent release at the nursery site (MHI or LAY). Although the model allows for mortality while in transport, for these simulations there was no deduction for captive mortality and the number of seals released was the same as the number collected. This is consistent with the very low levels of translocation mortality reported by Baker et al. (in review). In actual translocations to the MHI, the specific island and release site will be chosen on the basis of past suitability for native pup survival as well as other (social) considerations. However, for purposes of estimating demographic rates, there is no distinction among sites in the MHI and hence the MHI release site was treated generically for the translocation simulations.

Once released, the translocated pups are presumed to merge with the native-born seals, but the model has provisions for a first-year survival decrement of translocatees as compared to the native born seals at the release site. The concept underlying this survival decrement is based primarily on data supporting a positive relationship between weaning girth and first year survival, although the shape of that relationship varies over time and space (Baker 2008). Weaned pups in the MHI exhibit higher survival than in the NWHI and also MHI pups wean in far better condition on average than in the NWHI. Therefore, if we were to translocate NWHI weaned pups to the MHI, we would not necessarily expect them to enjoy the average survival rate of native pups, but rather the survival rate of *similarly-sized* pups in the MHI, as predicted by the fitted relationship between size (girth) and survival in the MHI. The average girth of 70 weaned pups born at FFS during 2007-2009 was 103.7 cm. Pups in the MHI with this girth would have an expected survival rate of 0.69. The overall survival rate of pups born in the MHI is 0.77, so that the expected decrement for FFS pups translocated to the MHI would be 0.69/0.77 = 0.90. This value was used for the survival decrement in certain translocation scenarios. To encompass the full range of possibilities, additional scenarios were run using no survival decrement for the first year after release at the nursery site. In a review of a variety of past translocation experiences,

Baker *et al.* (in review), found that translocated weaned pups enjoyed survival rates indistinguishable from native born seals in the same area.

For all simulation years subsequent to the first year after release, translocated seals shared the same survival rate as native-born seals with survival determined stochastically as described above. However, the model maintains separate "accounting" for the translocated seals so that the number of seals stochastically surviving to each age is tracked.

The model provides the option to return seals to their natal site at a specified age. For all of the simulated translocations described herein seals were returned at age 3. At this stage of the simulations, another survival decrement can be optionally applied to represent differential success relative to non-translocated seals left on site. As with the previous nursery site survival decrement, the return decrement applies only to the first year after release. The appropriate magnitude for this decrement is uncertain, but multiple factors might act to steer this adjustment in opposing directions. Returning seals will initially be unfamiliar with the new environment and it might take some time for them to orient to prime foraging and haulout areas. The available prey may also differ between the two areas. Returning seals may have less experience with sharks and competitors, especially if they grew up in the MHI. Finally, because there has been little experience translocating seals of this age, there may be some increased mortality due to stress of captivity. In contrast to the preceding negative considerations, and in accordance with the intent of the translocation to place seals in a more favorable environment, returning seals may be larger and healthier than seals that developed on site. This factor would positively affect survival of these seals.

Due to uncertainty regarding the relative roles that each of these factors might play in the survival prospects of returning seals, the simulations allowed for two different return decrements: no decrement (*i.e.*, same survival as native born seals), and a 29% decrement (multiplier of 0.71) relative to native seals. The latter decrement was derived from observations of the survival of seals collected at FFS for captive care treatment and later released at Kure Atoll or Midway Atoll. While those seals had a survival rate of 71% as compared to native seals, that reduction may be more severe than is expected in the current case. The captive care seals had no foraging experience prior to release, and were age 1 yr (rather than age 3 yr) when released. Nonetheless, we believe that the two values we used (100% and 71% of native survival) are reasonable estimates to bracket the range of plausible decrements that could be expected.

Combining the two values for each of the two survival decrements, and allowing for the two different geographic scenarios (FFS to MHI, and FFS to LAY), gives a total of 8 translocation scenarios plus the single baseline (no translocation) scenario (Table 2).

Table 2. Simulation scenarios to evaluate expected outcomes from two-stage monk seal translocations. All scenarios involved 10 seals translocated per year for 5 consecutive years, with all survivors returned to their natal site at age 3 yr. Populations were initialized at current age/sex status and projected forward 10 years.

Survival multipliers 1st year after release*		Locations (natal site to nursery site)	
Nursery (recipient) site	**Natal (source) site**	**FFS to MHI**	**FFS to LAY**
1.0	1.0	Scenario 1a	Scenario 2a
0.90	1.0	Scenario 1b	Scenario 2b
1.0	0.71	Scenario 1c	Scenario 2c
0.90	0.71	Scenario 1d	Scenario 2d

* Values in each cell are multiplied by operative rate for like age-class seals at the release site to provide an adjusted survival rate applicable to the treated seals.

Metrics for evaluation

It is important that a proper metric, or set of metrics, be identified to evaluate the outcomes from the translocation simulations. In the long term, critical metrics include total population abundance, metapopulation structure and extinction risk. These measures clearly depend on a wide range of factors (many of which are represented in the model along with their associated uncertainties), which collectively account for the substantial variability in outcomes characteristic of long-range projections. Although conducting long-range projections, and perhaps full population viability analysis (PVA), is vitally important in the strategic design of monk seal recovery, it is not our intent to undertake such an analysis here. Rather, we are primarily interested in near-term projections and metrics that are most useful for revealing the influence of the proposed translocations, and which minimize the confounding influence of other factors (density dependence, environmental stochasticity, etc.) that might mask the directs effects of the translocations.

Among the obvious metrics for assessing results from the simulations is raw population abundance or realized growth rate from the first to final years of the simulations. While these values are certainly informative, we believe that they can be misleading because they fail to address one of the salient limitations in the NWHI subpopulations, that of a depauperate age structure. As described in the background section, the protracted period of low juvenile survival has led to an ageing breeding population and dwindling cohort sizes. Barring a natural improvement in juvenile survival, or an intervention that addresses the same, that pattern is expected to continue for the foreseeable future. Within that context, it is appropriate that the simulations be evaluated according to some metric associated with population age structure. *Reproductive value* (v_x), and the related *population reproductive value* (V_{pop}), provide informative measures for this purpose. Age-specific reproductive value (Eqn. 1) reflects the probable future reproductive output of an individual female now of age x in terms of newborn equivalents. This value is given by:

$$v_x = \frac{\lambda^x}{l_x} \sum_{i=x}^{\max} \frac{\phi_i}{\lambda^i} \qquad (1)$$

where λ is the intrinsic growth rate, l_x is the survivorship to age x, and ϕ_x is the age-specific net maternity function ($l_x m_x$).

Reproductive value is a particularly useful descriptor for comparing the relative demographic contributions expected from individuals of different ages. It incorporates information on both the likelihood of survival to each reproductive age, as well as the expected reproductive output of an individual of age *x* and all future ages. It is less useful for comparing across lifetables (that is, among different populations) since it is scaled in terms of newborns for the unique lifetable applicable to that particular site. For monk seal populations, v_x attains a maximum at around age 5-7, but varies in maximum value from over 7 newborn equivalents (FFS) to under 3 newborn equivalents (MHI) (Figure 6). The difference between these two sites is largely attributable to the fact that at FFS, newborn pups stand a poor chance of reaching the age of reproductive maturity, whereas the prospects for pups born at the MHI are relatively high.

Whereas v_x is a property of the lifetable and does not reference the current population state, *population reproductive value* (V_{pop}) extends the concept by incorporating information on the current population size and age/sex composition. This parameter is the sum of the age-specific reproductive values for all of the females currently in the population:

$$V_{pop} = \sum_{x=0}^{\max} v_x n_x \qquad (2)$$

where v_x is the age-specific reproductive value of an individual of age *x*, and n_x is the number of individuals of age *x* currently in the population. One can think of V_{pop} as analogous to the quantity of potential energy stored in the population, which is likely to translate into future pup production. This metric is particularly *apropos* for our purposes because we do not believe that any single intervention, including translocations, will be capable of effecting a major improvement in total population abundance. We do believe, however, that by targeting our interventions on age-structure adjustments, we can fortify the population so that it is capable of a rapid response should environmental conditions more conducive to population growth eventually arise.

Using these two demographic measures as our primary metrics, what we hope to achieve through translocation is to increase the number of females in those age classes having the highest v_x. In aggregate, those additional females will act to increase V_{pop}. This concept is best illustrated graphically (Figure 7). Here we see the resulting age structure from a hypothetical translocation scenario, as compared to the baseline, no-translocation projection. The increase in number of females aged 5-9 yr corresponds to the age classes with the highest v_x at FFS (dotted line and right *y*-axis). By taking those seals to a more favorable nursery site, they will effectively circumvent the intense survival bottleneck affecting non-translocated seals left on-site.

Simulation Results

Effects of the translocations at the nursery site

Because the translocated seals were returned to their natal site at age 3 yr for the simulations, the effects of the translocations at the nursery site were ephemeral (Figure 8a). As expected, final abundance at the nursery site was the same with or without the translocations, but the mean population trajectory was elevated while the project was underway (years 1-8) as compared to the baseline trajectory. This observation holds true for all 8 translocation scenarios. This pattern of no net effect is based on the assumption that the addition of a small number of seals at the nursery site (maximum of 30 at any time, age pup through age 2) will not result in density-dependent reductions in survival at the nursery site. Further, the imported seals were "removed" prior to attaining reproductive maturity and therefore produced no pups at the nursery site. Because the translocations elicited no net change at the nursery site, the remainder of this review will focus on effects at the natal site.

Effects of the translocations at the natal site

For all scenarios, the natal population (FFS) was initialized at the current (2010) population size of 194 seals. The mean abundance declined under all simulation scenarios, including both the baseline (Bsl) and all translocation scenarios. In the no-translocation scenario (Bsl Figure 9), the abundance dropped to 93 seals at the end of the 10-year projection (52% decline). The projected decline is largely driven by loss of senescent seals and a declining cohort size from fewer breeding females. Although the benefits derived from translocations were not sufficient to fully compensate for the population decline forecast for this site, the final abundance with translocation ranged from 96 to 112 seals, depending on which site was used as the nursery (MHI or LAY) and which set of survival decrements was applied. The highest abundance (112 seals) was achieved when the seals were taken to the MHI and no survival decrements were applied.

When viewed in terms of their effects on *population reproductive value* (V_{pop}), returns from the simulated translocations were more impressive. However, as with final abundance, none of the translocations were sufficient to offset the expected decline from all other factors (Figure 10). Initially (year 1) the FFS population has V_{pop} of approximately 360 newborns (this value varies each simulation due to random age assignments of seals having unknown ages, such as those first identified as adults). Under the no-translocation scenario (Bsl), the V_{pop} is expected to decline to less than 165 newborn equivalents. In contrast, under the various translocation scenarios, V_{pop} ranged from 181 to 263 newborn equivalents. As with final abundance, the greatest returns were achieved through the MHI translocation scenarios (T1a to T1d), but even the least favorable translocation scenario (T2d; LAY with both survival decrements) produced a 10% improvement in V_{pop} as compared to the baseline scenario.

Yet another way to view the returns from the translocations is by inspecting the proportional change in V_{pop} from year 1 to year 10 of the scenarios (Figure 11). With no intervention, in 10 years the FFS subpopulation is expected to have only about 45% of the reproductive potential of the initial population. Under the most favorable translocation

scenario (T1a), approximately 73% of V_{pop} is preserved, with the remaining translocation scenarios yielding between 50% and 70%.

Interpretation of Simulation Results

It is evident from the simulations that FFS is likely to undergo a significant decline in both abundance and reproductive capacity with or without focused intervention. The best that can be achieved through translocation is to moderate the decline and reinforce the population so that it has enough resilience to capitalize on improved conditions should they occur, and to initiate a slow natural recovery which might be bolstered by additional interventions. The simulations described above are all focused on a single subpopulation, FFS, which currently has the poorest juvenile survival and lowest intrinsic growth rate of any breeding site. The general pattern described for FFS, along with the expected benefits from translocation, are applicable to all of the NWHI subpopulations. The magnitude of the benefit conferred through translocation will vary according to the current status of the subpopulation and the survival differential between whichever natal and nursery site are selected for treatment, as based on the decision framework presented above.

The specifics of the 8 simulation scenarios we described were chosen to illustrate the range of benefit that might be realized from two-stage translocation. Although the specifics of these scenarios were hypothetical, it is worth considering which among them we believe to be the most realistic. For the FFS to MHI translocations (T1a – T1d), there is a reasonable expectation that the first survival decrement (0.90 multiplier for the first year after release) will apply due to the smaller size and inferior condition of FFS pups relative to MHI pups. The post-return decrement is less certain; it is likely that the 0.71 survival multiplier is overly severe, as it was based on a set of captive care seals released at age 1 yr and having no prior foraging experience. These observations lead us to conclude that the actual benefit from translocation to the MHI would be intermediate between scenarios T1b and T1d.

We can apply the same logic to the LAY translocations (T2a to T2d). First, the initial decrement is likely to be less than the 0.90 multiplier because seals born at FFS and LAY are more similar in size and condition than are seals born at FFS and MHI (as used to calculate the 0.90 decrement). Therefore the actual multiplier is expected to be less severe than that prescribed by the 0.90 value used for the MHI. Similarly, because the seals will be returned to habitat that is similar to that in which they developed (*e.g.,* in terms of predators and competitors), the returning decrement could arguably be less severe than that for seals transferred from the MHI to FFS. It is reasonable to expect that *some* decrement will be incurred as the seals orient to the new area, so that the correct value for the second multiplier will lie between 0.71 and 1.0 but probably on the higher end of that range. This logic leads us to conclude that the most realistic scenario is a composite of scenarios T2a, T2b and T2c.

There is another very important consideration with regard to the FFS to LAY translocations and which may be applicable to any within-NWHI translocation scenario. In contrast to the MHI, each of the NWHI subpopulations is currently declining. Consequently, it is

questionable whether any of these sites could accommodate additional seals without causing further depression in survival rates. Further, substantial inter-annual variability in vital rates in the NWHI may make it difficult to identify which combination of sites might reliably produce a positive outcome in a given year. This same variability could also make it difficult to discern whether any downturn in demographic performance was related to translocation efforts or attributable to normal stochastic variation. There are, however, clear advantages to within-NWHI translocations. Confining the interventions to the NWHI circumvents potential problems with human-seal interactions and public resistance to importing, even if only temporarily, additional seals. Disease and quarantine concerns might also be less intense in the context of exclusively within-NWHI translocations.

Addressing uncertainty in post-return decrements to survival

The simulated benefits of two-stage translocations are strongly influenced by the magnitude of decrements applied to survival of translocated seals after each translocation stage. The decrement values used for the simulations were extrapolated from the best available data and are a reasonable expected range based on existing information. There has been considerable experience translocating weaned pups (Baker et al., in review) and much analysis of the relationship between weaning girth and survival (Baker 2008), so that the expected range of survival decrements applied to translocated weaned pups is well supported. However, there is much greater uncertainty associated with the decrement applied to 3-yr-old seals returned to their natal subpopulations. Given this uncertainty, it is informative to consider how large a survival penalty translocated seals could incur before their survival matched, or was inferior to, that of non-translocated seals at the natal site. This threshold decrement value can be estimated from observed survival rates for seals at the natal and nursery sites (Table 3).

Table 3. Age-specific survival rates for recent years at FFS, LAY and MHI. The rates in the first column represent survival from weaning to Age 1.

	Weaning to 1 yr	**1 yr to 2 yr**	**2 yr to 3 yr**	**3 yr to 4 yr**
FFS	0.359	0.567	0.941	0.895
LAY	0.681	0.537	0.917	0.938
MHI	0.841	0.859	0.910	0.891

In the above simulations, FFS served as the donor site and MHI or LAY served as the nursery sites. Seals were returned seals to their natal site at age 3 yr, at which point a survival decrement was applied for the first year after return (from age 3 to 4 yr). Therefore the value of greatest interest for evaluating translocation is survivorship from weaning to age 4, designated as l_4* (the asterisk serves to distinguishes this parameter from the customary l_4 which measures survival from birth to age 4), which is the product of the age-specific survival rates in Table 3):

$$l_4^* = p_0 * p_1 * p_2 * p_3 \quad (3)$$

where p_0 is the survival rate from weaning to age 1 and p_1-p_3 s are age-specific survival rates for the respective ages. Substituting the survival rates for ages 0-3 yr at FFS (Table 3) into Equation 3 gives $l_4^* = 0.171$. Accordingly the objective of the translocations is to improve on that rate such that the translocated seals do better than those "control" seals left at the natal site.

The operative survival schedule for the translocated seals is a composite of the survival rates for ages 0-2 yr at the nursery site, and age 3 yr at the return site. Additionally, we have incorporated two survival decrements that apply, respectively, to age 0 yr (weaning, when the seals are first released at the nursery site) and age 3 yr (after they are returned). The operative survival schedule for the translocated seals is then:

$$l_4^* = (p_0*d_1) * p_1 * p_2 * (p_3*d_2) \quad (4)$$

where p_0, p_1, and p_2 are the survival rates for weaning through 2 yr at the nursery site; p_3 is the survival of age 3 yr seals at the return site; d_1 is the survival decrement for pups during the first year after release, and d_2 is the survival decrement at the return site for the first year after release.

The most severe d_1 survival decrement used for the simulations was 0.90, derived from examining the survival of MHI pups of comparable girth to average FFS pups. However, because the difference in weaning girths among the NWHI subpopulations is far less than the difference between NWHI and MHI pups, a d_1 value of 0.90 may be overly severe for translocations between NWHI subpopulations. Yet, to determine survival decrement thresholds, we can conservatively set d_1 to a fixed constant = 0.90, leaving only decrement d_2 as an unknown:

$$0.171 = (p_0*0.90) * p_1 * p_2 * (p_3*d_2) \quad (5)$$

where 0.171 is the aforementioned l_4^* for FFS-born, non-translocated seals. This equation serves as the basis for calculating the threshold return decrement, d_2, that demarcates a net benefit from net harm associated with two-stage translocation.

For FFS to MHI translocations, substituting MHI survival rates for p_0 through p_2, and the FFS rate for p_3 in Equation 5 gives:

$$0.171 = (.841*0.90) * 0.859 * 0.910 * (0.895*d_2) \quad (6)$$

Solving for d_2 gives a return decrement value of 0.324. This means that, given recent survival rates at FFS and MHI, seals translocated from FFS to MHI as pups and returned at age 3 yr would do better than non-translocated seals if their realized survival for the first year after return is at least 32% that of non-translocated seals.

For FFS to LAY translocations, substituting LAY survival rates for p_0 through p_2, and the FFS rate for p_3 gives:

$$0.171 = (.681*0.90) * 0.537 * 0.917 * (0.895*d_2) \quad \text{(Eq. 7)}$$

Solving for d_2 gives a return decrement value of 0.635. This means that, given recent survival rates at FFS and LAY, seals translocated from FFS to LAY as pups and returned at age 3 yr would do better than non-translocated seals if their realized survival for the first year after return is at least 63% that of non-translocated seals.

The preceding calculations of expected survival decrement thresholds are point estimates which do not account for high inter-annual variability which characterized monk seal survival, or the demographic stochasticity associated with small sample sizes (reflected in Fig. 9-11). Nonetheless, these estimates suggest that there is a sizable safety buffer for MHI translocations and a marginal safety buffer for within-NWHI translocations even if the lowest value used in the above simulations (0.71) was overly optimistic. The actual degradation in survival could be more severe than assumed and the translocated seals are still likely to perform better than seals left at their natal site.

The intent of two-stage translocation is not to merely "break even" but rather to confer enough benefits on the managed subpopulation to warrant the effort, expense and risk involved. Whether or not a particular translocation plan is advisable must still be determined according to the expected benefits (abundance, V_{pop}, and other metrics) likely to accrue from implementing that plan. However, the threshold values provide a valuable reference for maintaining a standard of "doing no harm" with the proposed program.

Under two-stage translocation, the earliest data about the actual return survival decrement would not be available until the fourth year of the project, when the survival of the first group of 3-yr-old seals returned to their natal sites would be evaluated. Relevant information could, however, be collected by initiating some limited experimental translocation of juvenile seals. The experiment may first involve moving a small number of juveniles (at least age 3 yr) among areas of the NWHI where foraging conditions or success are thought to be comparable. This would help evaluate the potential combined effects of translocation on this age-class, without the confounding influence of a marked change in habitat quality. Subsequently, older juveniles might then be moved from an area with relatively low competition and predator densities (e.g., the MHI at present) to areas with greater competition and higher predator densities (NWHI). This would provide information about how older juveniles respond to being released in unfamiliar environments with more challenging conditions relative to where they grew up.

Conclusion

The two-stage translocation strategy described and analyzed above is but one tool in a suite of interventions now planned or proposed to promote monk seal conservation. Unfortunately, none of these interventions, whether undertaken singly or in concert, are sufficient to fully compensate for the projected decline in the species. Although we know of no direct precedents for two-stage translocation, and there are many unknowns that accompany its implementation, we think that this approach will be indispensable to the overall recovery effort.

Two-stage translocation is a novel strategy that should produce not merely an ephemeral boost in abundance, but, more importantly, will preserve essential reproductive potential within the population. This intervention will be flexible and adaptable, with the specific form it assumes each year informed by the most recent data on demographic performance at each site. This flexibility will allow demographic issues throughout the system to be addressed, whereas some prior interventions have focused on specific mortality factors at individual sites. Those interventions are vitally important to the welfare of specific subpopulations, but they lack the scope to insulate the population from further system level decline and perhaps extinction.

The decision framework represents how the translocation program is expected to be conducted. Similarly, the simulations provide the best assessment of the returns that could be achieved through translocation. Once the program is underway, both the model inputs and details of the decision framework will be iteratively refined to reflect new observations from incoming data. Accordingly, we intend to embark on this project with the utmost caution, initially as a small-scale experiment to refine the protocols, evaluate the early results, and modify and scale up the program as appropriate.

The need to identify beneficial interventions does not end with translocation, as the NMFS will continue to identify other creative strategies to arrest the population decline. But such a solution has proven elusive, and given the current trends, it would be imprudent to defer decisive action while the quest for that ultimate remedy goes forward. It is our hope that the need for translocations, along with the need for all other intrusive measures, will eventually yield to natural processes, as the trajectory of the monk seal population begins its ascent to a sustained and full recovery. In the interim, it is incumbent on NMFS to take the steps necessary to ensure that the population is not indifferent to any improvement in natural conditions, but retains the capacity to respond accordingly.

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Figure 1. The Hawaiian Archipelago and Johnston Atoll

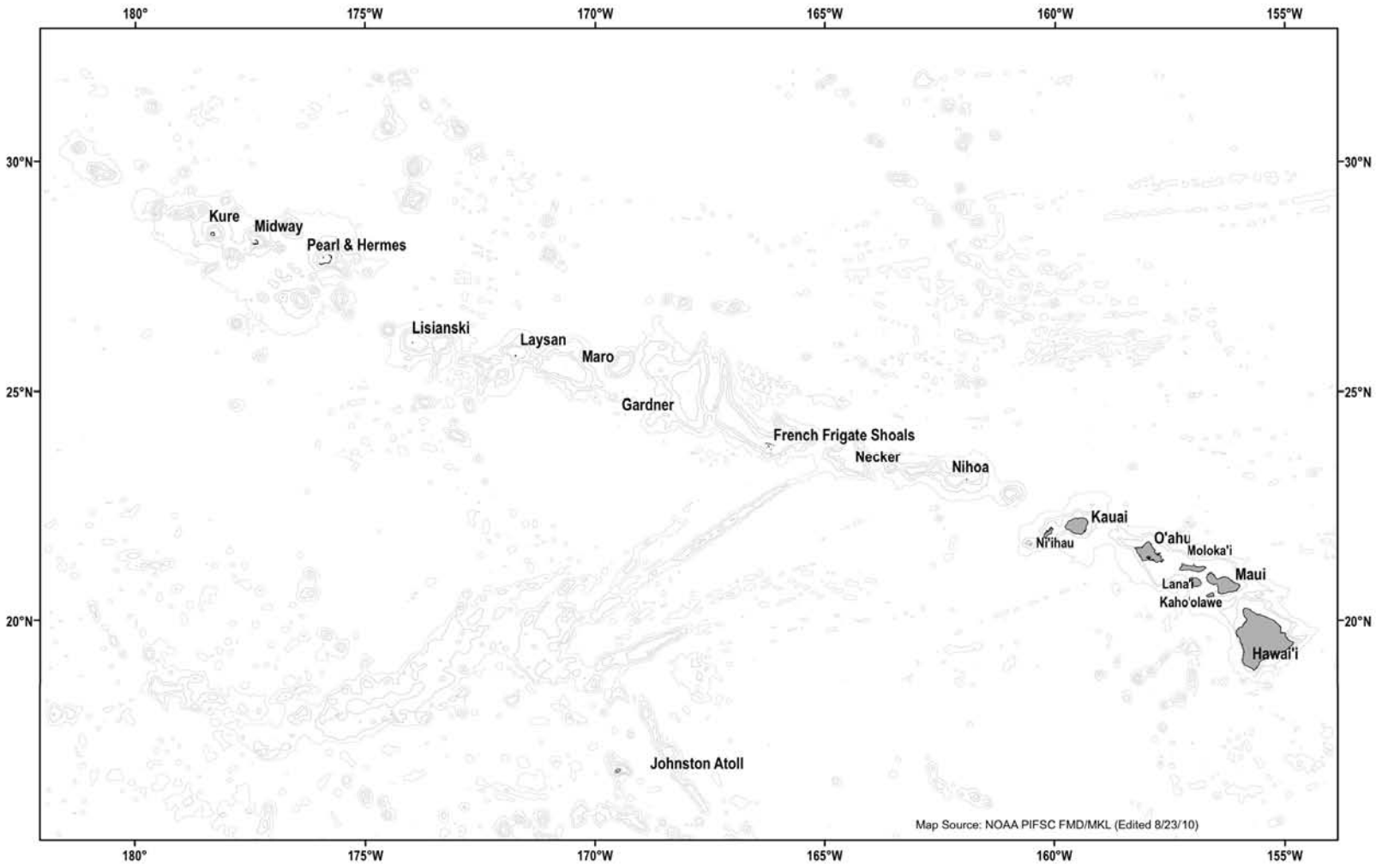

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Figure 2. Cumulative survival probability curves (l_x) for the six Northwestern Hawaiian Islands subpopulations (solid lines), based upon recent (2006-2008) rates, and all available data in the main Hawaiian Islands (dashed lines). From Baker *et al.* (in press).

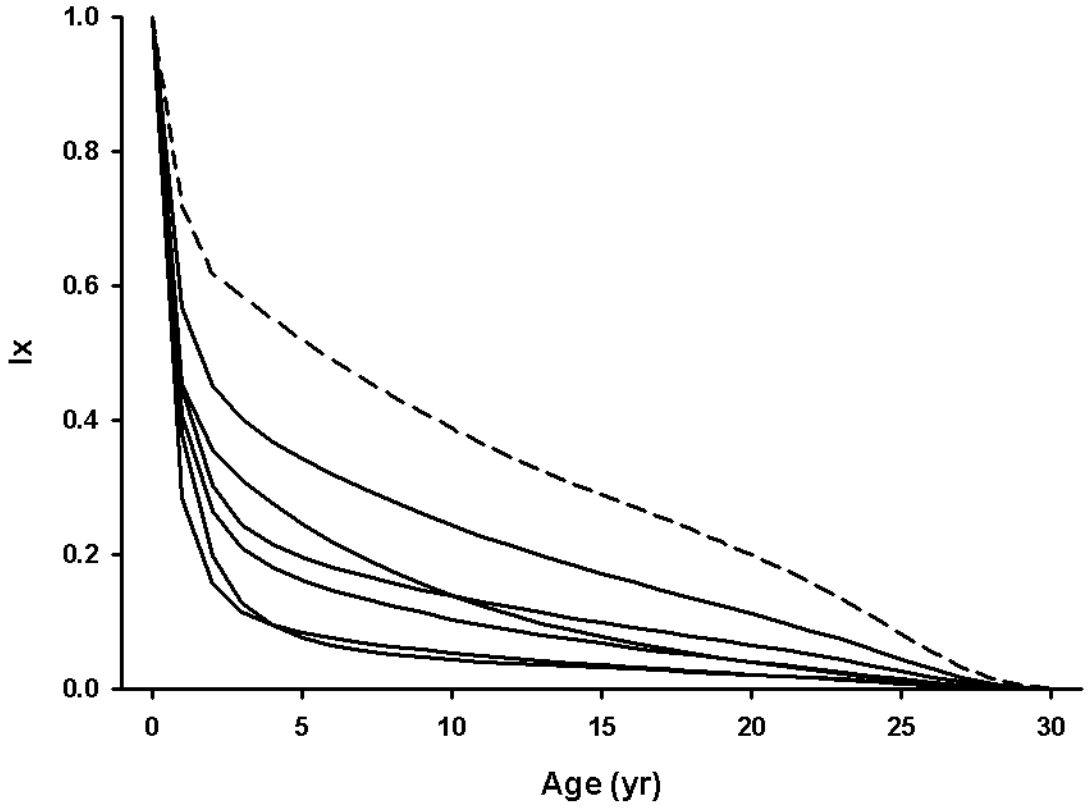


Figure 3. Fitted age-specific reproductive curves for three subpopulations of Hawaiian monk seals (LAY= Laysan Island, FFS=French Frigate Shoals, LIS=Lisianski Island).

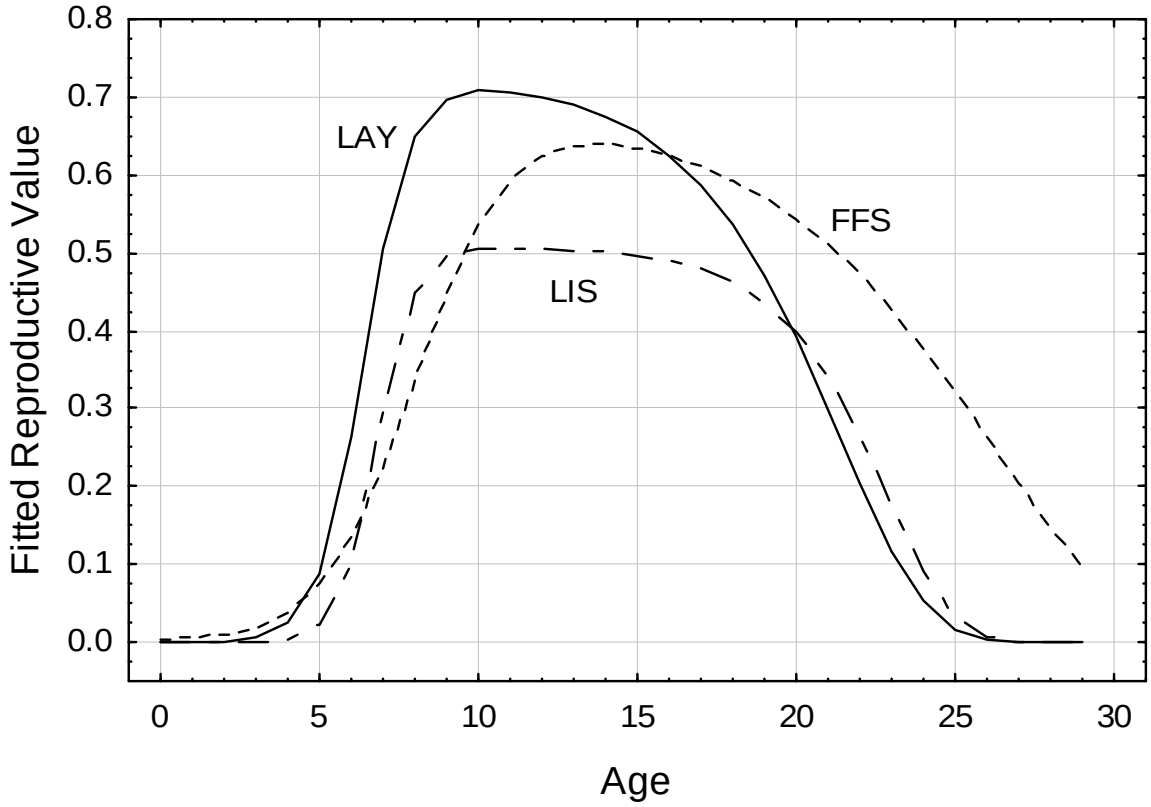


Figure 4. Simulation model projection of future Hawaiian monk seal pup production at six NWHI subpopulations pooled. Values are mean number of pups born in each simulation year in a 20-year projection.

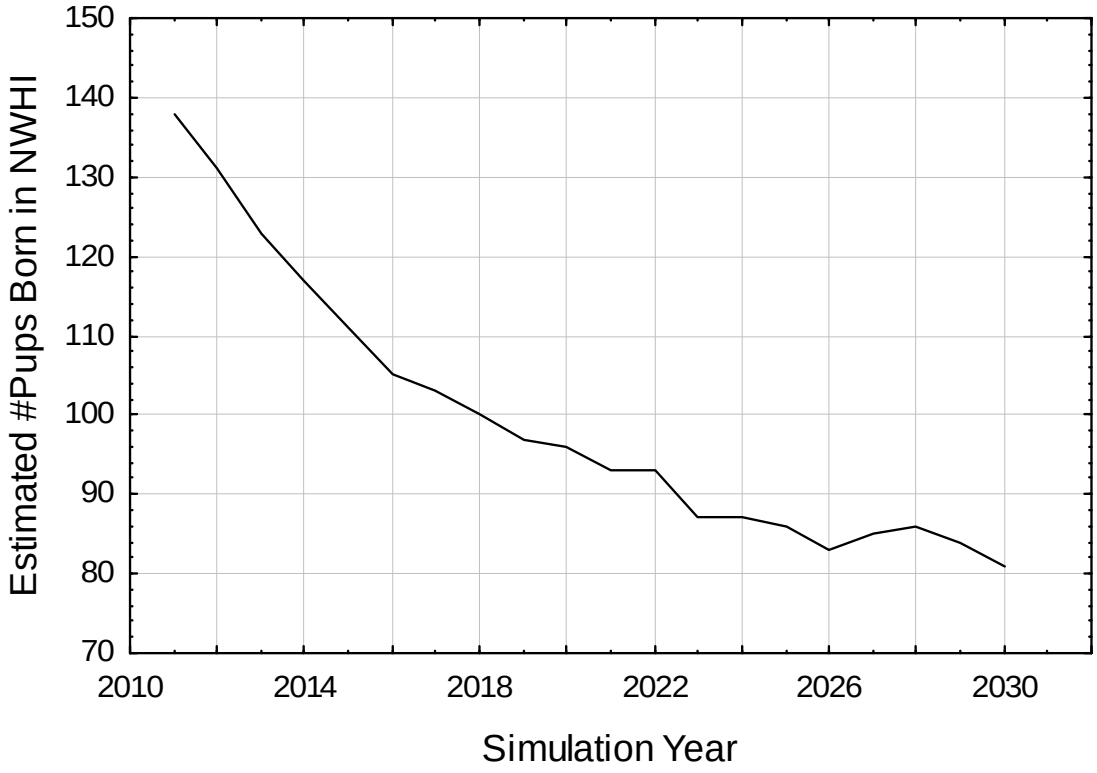


Figure 5a. Flow chart depicting decision framework for translocation of weaned Hawaiian monk seal pups.

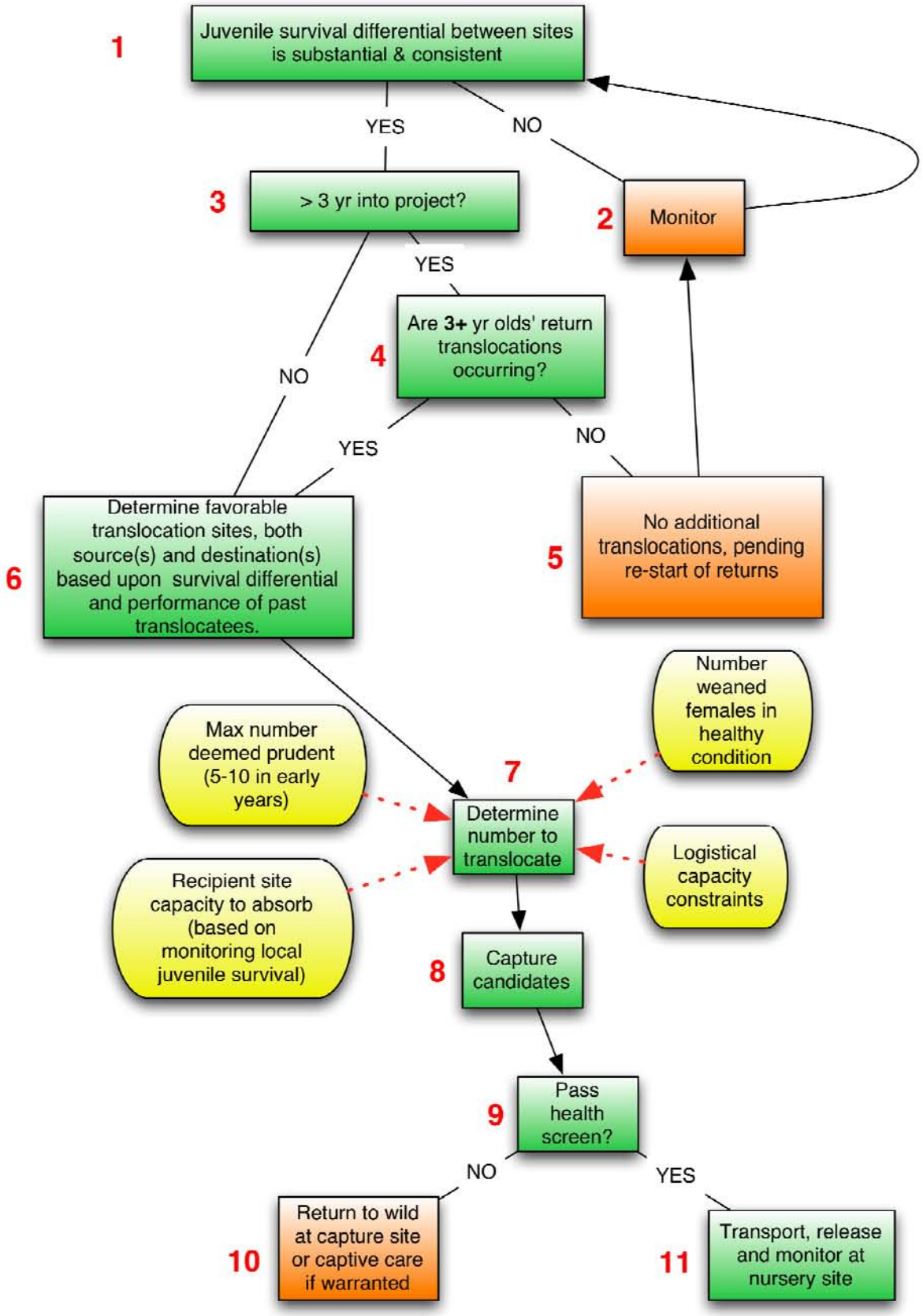


Figure 5b. Flow chart depicting decision framework for translocation of 3+ yr-old Hawaiian monk seals.

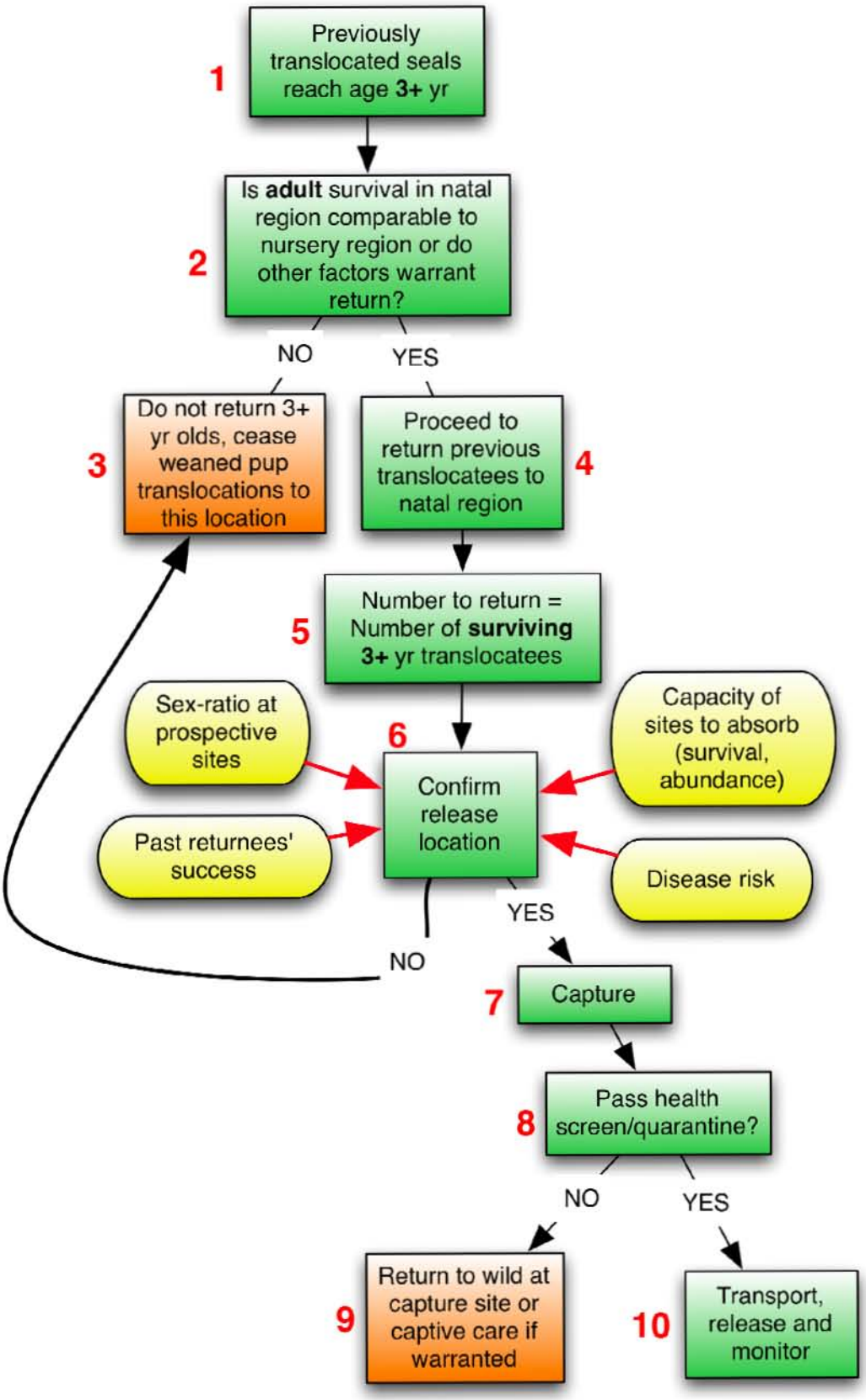


Figure 6. Contrasting age-specific reproductive value curves for French Frigate Shoals and main Hawaiian Islands MHI monk seals.

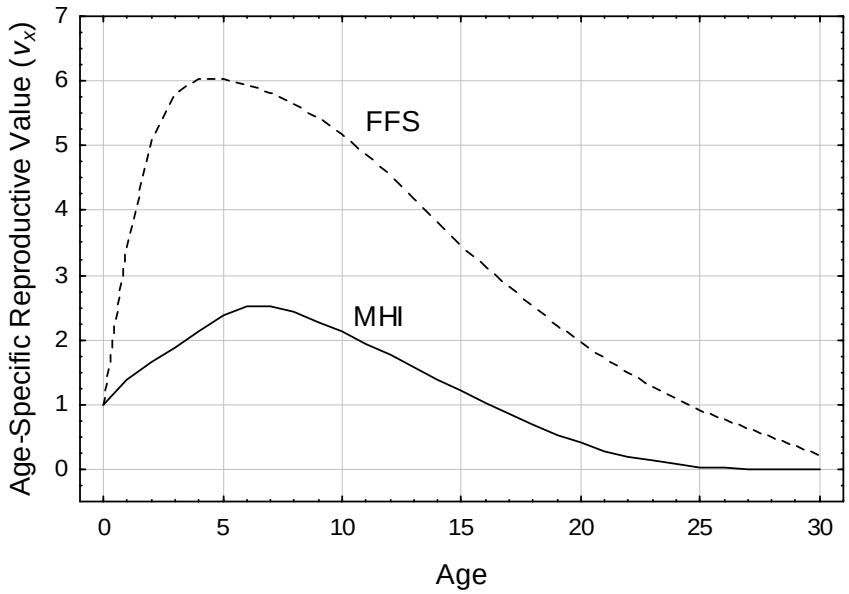


Figure 7. Age structure modification at natal site associated with a representative two-stage translocation. In this hypothetical scenario, translocated seals grow up at a nursery site and returned to the natal site at age 3, with this treatment repeated for 5 consecutive years.

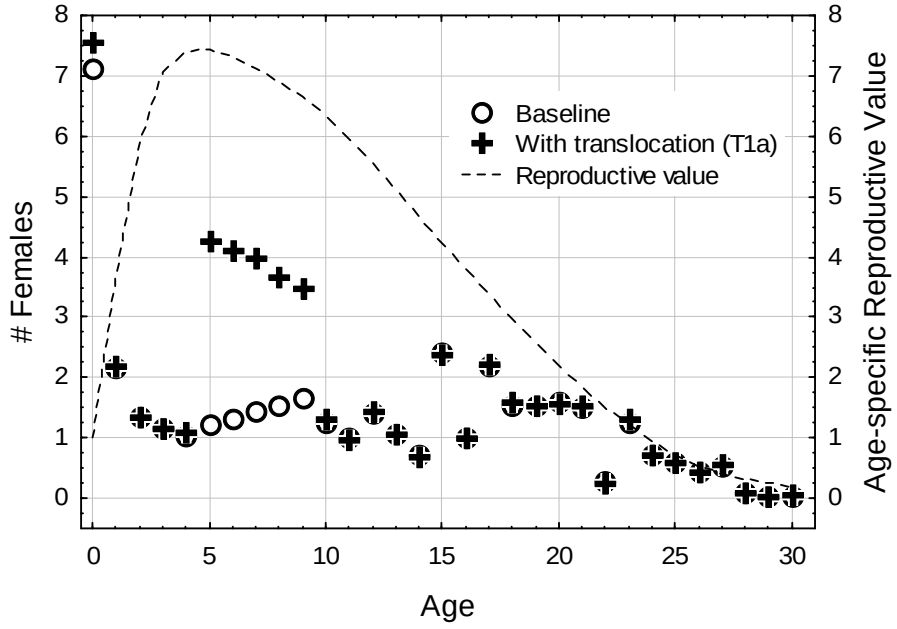
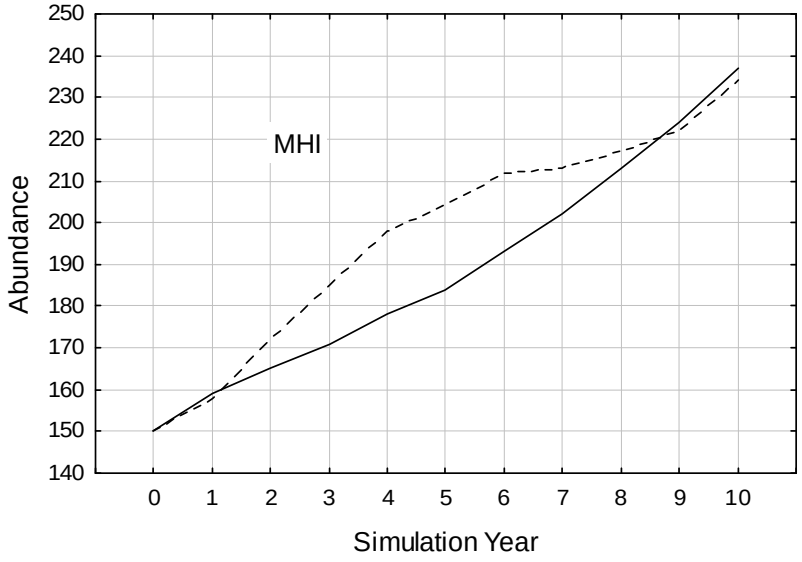


Figure 8. Simulation trajectories at the nursery (MHI) and natal (FFS) sites for a representative translocation scenario. Lines represent mean abundance at each time step, with translocation (dotted line) and without translocation (solid line). The salient difference at the nursery site is an ephemeral elevation in mean abundance during the years the project is underway.

8a. Nursery site (MHI)



8b. Natal site (FFS)

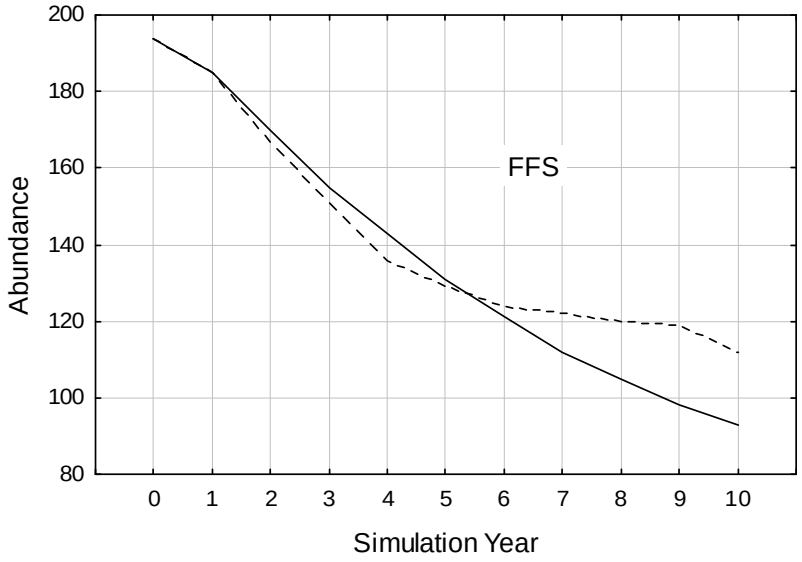


Figure 9. Mean abundance (with 5% and 95% tails) at the natal site (FFS) for the baseline (Bsl) and 8 translocation scenarios. Scenarios differ in the nursery location and survival decrements as described in Table 2.

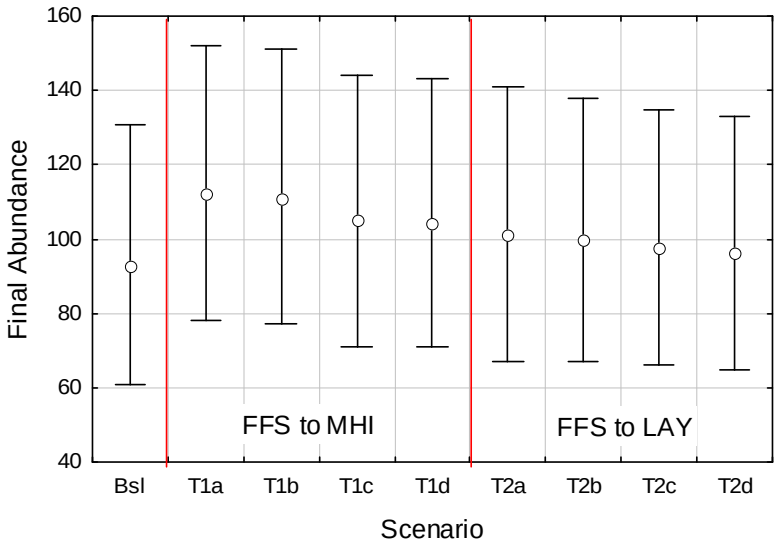


Figure 10. Population reproductive value (V_{pop} with 5% and 95% tails) at the natal site (FFS) for the baseline (Bsl) and 8 translocation scenarios. Scenarios differ in the nursery location and survival decrements as described in Table 2.

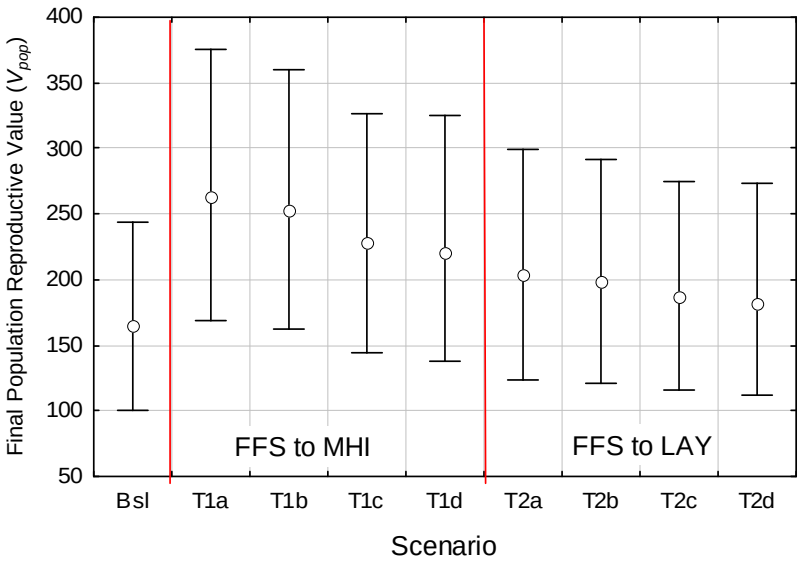
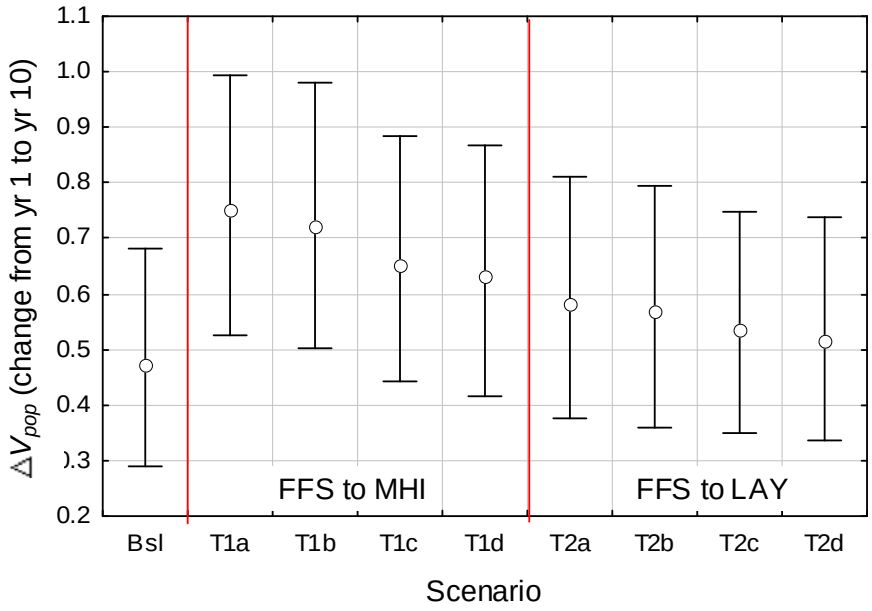


Figure 11. Change in Population Reproductive Value (ΔV_{pop}) at FFS from year 1 to year 10 of baseline and translocation simulation scenarios. Scenarios differ in the nursery location and survival decrements as described in Table 2.



Appendix F
Health Screening and Quarantine Protocols for Hawaiian Monk Seal Translocation Between Subpopulations

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HEALTH SCREENING AND QUARANTINE PROTOCOLS FOR HAWAIIAN MONK SEAL TRANSLOCATION BETWEEN SUBPOPULATIONSBACKGROUND

These protocols support NMFS' translocation actions. These protocols are intended for any seal translocations between subpopulations (e.g., two-stage translocations or experimental juvenile translocations), as opposed to rapid and short distance translocations (within atolls or within the main Hawaiian Islands, MHI). Separate protocols are included for translocating different age classes of seals and are applicable to any locations in the Hawaiian Archipelago.

These protocols are subject to refinement and change based on experience that will accrue during the next decade, veterinary consultation, emergence of new testing procedures, disease risks, etc. Protocols will be reviewed annually and updated as required to refine protocols and improve implementation.

Weaned Pup Translocations

Steps involved in weaned pup translocations include:

1) Selection and capture of seals, healthscreening, and attachment of tracking instruments.
2) Recapture and transport to vessel/aircraft.
3) Transport to destination site.
4) Release of seals at new location.
5) Post-release monitoring.

Transport Vessels: A variety of transportation modes will be used including large vessels (NOAA ships, other chartered vessels), airplanes, helicopters, automobiles, and other as appropriate depending on location and available resources.

Specific Protocols:

1) *Selection and capture of seals, health screening and attachment of tracking instruments.*

   Any weaned pup at the designated source site will be considered a candidate for selection, as long as it exhibits no apparent signs of disease, injury or any other factors that may compromise survival. Relatively recently (i.e., less than a month previous) weaned pups may be favored for selection as they are more likely to remain at the release location longer than those that have weaned earlier (Baker et al. in review). Seals will undergo health screening and a subset will be instrumented with a tracking device approximately 1-4 days prior to transport.

   Seals will be captured using standard practices (by hand or using a hoop net). Blood may be collected without sedation or seals will be sedated.

Seals will be evaluated using the current standard health screen. This may be modified as deemed necessary due to specific disease concerns in source and recipient subpopulations, up to date testing procedures and veterinary consultation. Current practice includes:

Blood Analysis

1) Field analysis:

a. WBC count – Unoppette system

b. RBC count – Unoppette system

c. WBC differentials, platelets – Microscope and archive extra unstained smear

d. Hematocrit/ PCV – Microhematocrit centrifuge

e. Hemoglobin

f. Serum chemistry (Na, K, Cl, BUN, Creat, Ca) – I-Stat kit

g. Glucose – Glucometer and test strips

h. BUN - Azostix

2) Lab analysis (frozen 0.5-1.0 mL aliquots of serum, stored in liquid nitrogen dewar in the field)

a. Serum chemistry – send to IDEXX

b. Tier 1 testing, which currently includes: heartworm (in MHI), morbillivirus, seal herpes 1, Brucella, Toxoplasma, Chlamydia, Leptospira (multiple serovars), canine adenovirus (in MHI), feline calicivirus (in MHI), parvovirus, and fecal culture.

3) Banked blood samples stored in liquid nitrogen dewar in the field

a. Remaining serum (or at least 4 aliquots)

b. 0.1 mL whole blood (Na heparin and EDTA)

c. EDTA plasma, buffy coat, and RBC

d. Na heparin plasma, buffy coat, and RBC

e. Biotoxin card

f. Blue top tube – invert to mix, decant whole blood into mercury-clean container, and freeze for mercury analyses

Swab processing:

1) In the field place all swabs in the liquid nitrogen dewar after collection

2) Lab analysis

a. 1 nasal and 1 rectal swab in Avian Influenza transport media (frozen) – send to National Wildlife Health Center in Madison

b. 3 fecal swabs in Cary Blair transport medium

c. 2 dry swabs from the eyes, nares, mouth, genital orifice, rectum and any external wounds

d. 1 swab of any abnormal tissue in viral transport media (if deemed appropriate)

Blubber Biopsies:

Put in liquid nitrogen dewar in the field

1) 1 for toxicology (Teflon container)

2) 1 for fatty acid analysis (cyrovial)

Other Sampling:

1) Fur – put into mercury-clean bag and freeze

2) Any other sampling deemed necessary by the PI or attending veterinarian.

External Exam

1) Physical Exam
   a) No obvious injury
   b) Auscultation of lungs, heart
   c) Examine eyes, nose, ears etc. (damage, disease, moisture)
2) Morphometrics
   i. Girth
   ii. Length
   iii. Weight

Samples not analyzed in the field will be stored, shipped, and analyzed as described in the current monk seal permit.

If, based on veterinarian's physical exam and immediately available test results, seals do not show any signs of injury or illness, some may be instrumented with appropriate telemetry equipment to monitor them after release. This device will assist post-release monitoring until the opportunity to visually survey the seals arises.

If seals do show physical signs of injury or illness, the attending veterinarian will determine whether to sedate for full biomedical sampling or to treat the injury or illness. These animals will be covered under the health assessment portion of the PIFSC research and enhancement permit, or under the MMHSRP permit depending on the treatments required.

After this handling, seals will either be released and allowed to freely range until capture for transport or will be held in a shore pen (approximately 1-4 days). Allowing seals to freely move will minimize any stress seals may experience being held in a captive shore pen. Holding in shore pens allows for better assessment of animals health and reduces effort of relocating seals within the atoll. The decision to use pens or allow seals to free-range prior to transport will depend on conditions at the field site, results of physical examination and transport logistics. If seals are allowed to range freely, prior to the second capture the seals will be visually assessed for any outward signs of injury or illness. If the attending veterinarian determines the animal to be unhealthy, either after physical examination and/or evaluation of blood sample, then the animal will not be translocated.

2) Recapture and transport to vessel/aircraft.

Weaned pups will be captured using standard techniques for the transport of weaners. If transport involves a small boat shuttle to a larger ship, animals will be restrained in a stretcher net by two trained seal biologists and placed on the deck inside the small boat. Seals will then be transported directly to the vessel. Water will be available onboard to cool the seal when needed. The number of seals that may be transported at one time in the small boat will be dependent the specific boat's capacity. There should be adequate area that no seals are piled on top of each other and that there is a reasonable amount of space for researchers to operate to cool and move seals as necessary.

Seals will be taken onto the vessel by lifting the entire small boat by crane up to the mid-ship low railing access on the port side of the vessel (or the safest method depending on the vessel being used). One biologist will remain with the seal during lifting. Seals will be hand lifted from the small boat onto the vessel and brought to their cages.

The distances between cages will be wide enough to allow biologists to move between, prevent spread of urine and feces between cages, and

allow the free flow of air. The cages will be strapped to the deck to prevent sliding if rough seas develop. Seals will be placed on a blue tarp, removed from the stretcher net and lifted manually into the cages. Seals will be held separately. A saltwater hose is located near the cage and ice is available for cooling off seals in the heat of the day. Cage openings will be accessible to allow access to animals if medical care or treatment is needed in transit.

If transport is via automobile to aircraft, similar but more logistically simple procedures will apply. Seals will be captured in the same way. Unless it is not feasible, the seals will be transported in cages (again while being observed and with water for cooling available) in automobiles and likewise aboard aircraft.

3) Transportation to destination site

The transportation of seals between subpopulations could be done via boat, plane, car, or other reasonable mode of transportation. Multiple modes of transport can be used at any time. During all transports, the animals will be escorted by a veterinarian and sufficient staff to be able to respond to an emergency.

Transport via ship:

During transport the deck(s) holding the seals will be off limits to anyone except seal biologist monitoring the animals, the veterinarian and ships safety officers. No physical contact with seals will be made unless a problem arises in which a seal needs to be restrained for examination or treatment (see contingency plan below). If physical contact is made, protocols for handing seals in the wild will be followed as described in the permit application and as written in the Hawaiian monk seal Field Research Manual for safe handling of seals and minimizing risk of disease transmission (e.g., clean coveralls that have been soaked in bleach solution, wash hands, etc). Observers will look for a variety of threats, indications of stress or disease, and ways to mitigate both while observing the animal:

a) Entrapment/entanglement in cage

b) Abnormal discharge from body orifices

c) Abnormal respiration

d) Abnormal behavior

e) Modifying ambient temperatures to prevent overheating

f) Enforce security-preventing disturbance by people on ship

g) Monitor for ship equipment/supplies posing risk to seals.

Seals will be monitored 24 hrs a day while on the ship by observers working 2-hour shifts. Observers will watch for changes in external behavioral/health parameters. Initially upon be loaded onto the boat the seals will be closely observed for signs of acute stress (e.g. continued high respiration and heart rate, agitated behavior, shaking). Descriptive and medical observations will be collected for each individual seal. The following types of data will be recorded:

a) Observation form to be annotated every 30 minute

b) Summary form to be completed at the end of each 2-hour shift

c) Eye exam form - only if eye issue is observed

Veterinary exam sheet will also be filled out by the attending vet prior to release.

4) Release of seals.

The protocols for releasing seals will be dependent on conditions at the selected release site(s).

General Considerations:

- Most releases will be on shore at a beach selected based on suite of criteria including, but not limited to:
  - site where pups have weaned and survived in past
  - ideally where conspecifics of similar age are present or frequent
  - if in MHI, then isolated from human contact
- Immediately after release seals will be monitored on shore for as long as logistically practicable.

If the site is a remote island or beach and landing by small boat is treacherous then this strategy will be considered (this will only be done in rare circumstances):

The vessel will approach the release site and attempt to get as close as possible to minimize distance traveled by small boats. Seals will be removed from their cages and placed on a blue tarp. They will be captured using a stretcher net and brought to the small boat, which will be held by the crane at the portside mid-ship low railing access (or other technique deemed safest and depending on vessel). Seals will be transported on the floor of the small boat and the boat will be lowered into the water for a near-shore release of seals.

The small boat will attempt to get within at least 100 m of shore but closer if conditions allow. This will mean the boat will be in shallow water with

emergent land clearly visible for seals to navigate by. Two biologists will lift the seal over the rail of the safe boat, lowered to the surface of the water and one side of the stretcher net dropped allowing the seal to swim away. Safety lines will be tied to the boat side bar of the stretcher net and connected to the SAFE boat. This will keep the stretcher net from sinking and will cause the net to open releasing the seals if it should be dropped. An additional crewmember will be prepared with snorkel gear to help in the water if something needs to be done in the water.

If the site can be accessed by truck or other vehicle the following should be considered:

- Time of transport should be minimized so animals should be moved be transported during peak traffic times
- Animals will be escorted in the back of the truck by monk seal specialists to monitor the animals' health and welfare during transport
- Water will be available to cool the seal during transport
- A veterinarian and emergency gear will be available should an animal need assistance
- A back up/escort vehicle will be accompany the transport in case a vehicle should breakdown, so the animal(s) can continue to be moved

5) *Post Release Monitoring*

a. Remote Monitoring

Movement and diving behavior of seals instrumented with tracking devices data will be compared to data concurrently collected from native seals or to pre-existing data on seals of similar age to determine whether translocated seal behavior is within the normal observed range.

b. Resighting

Attempts to resight translocated seals will be made during regular population monitoring effort or intensified observation a the release subpopulation. The level of observation effort will vary largely depending upon the accessibility, logistics and cost of mounting surveys. Subsequently, haulout behavior and survival of translocated versus native seals of the same age will be compared.

Translocation of older seals

The following protocols pertain to the translocation of juvenile or sub-adult Hawaiian monk seals (e.g., involved in the second stage of two-stage translocation). Similar protocols will be apply to translocation of aggressive adult male monk seals. Any seal older than 1 yr, which has been identified for translocation for any of the purposes proposed under the PEIS, may be subject to these protocols. Once identified for translocation, subjects will be considered further if they exhibit no apparent signs of disease, injury or any other factors that may compromise survival[1].

Steps involved in translocation of older seals may include some, but not necessarily all, the following:

1) Selection and capture of seals for health screening and attachment of tracking instruments.
2) Quarantine
3) Transport
4) Release of seals at new location.
5) Post-release monitoring

Transport Vessels: Same as for weaned pups

Specific Protocols:

1) Selection and capture of seals for instrumentation and health and disease screening.

Procedures will be as described above for weaned pups with the following exceptions. Older seals will typically be capture with a stretcher or hoop net and transported in cages appropriate to their body size. Because older seals are far more mobile than weaned pups, they will usually be held in shore pens after initial capture until transport to the destination. As with weaned pups, seals which do not pass their health screen will not be translocated. If appropriate, they may be brought in for treatment under the MMHSRP or released on site if deemed appropriate by the attending veterinarian. Further, aggressive adult males deemed inappropriate for translocation may be brought into permanent captivity or euthanized according to the currently existing research and enhancement permit.

[1] Aggressive adult male selected for translocation to mitigate harm to other seals may nevertheless be selected even if compromised in some way.

2) *Quarantine Period*

When transporting seals from the MHI to the NWHI, a period of quarantine may be necessary to reduce the likelihood of transferring a disease between the two regions. Quarantine holding will be done at a facility, on board a ship or in shore pens depending on the situation and facilities availability. The quarantine period should be long enough for the analysis of biomedical samples or longer than the prepatent period for the demonstration of clinical signs for the diseases of greatest concern. Two weeks is the generally accepted period and this period could include the transport period. Specific quarantine protocols are described in greater detail in a subsequent section.

3) Transportation to release site

Transportation of seals will follow the protocols established for weaned pups.

4) *Release of seals at new location.*

Release of seals will follow the protocols established for weaned pups.

5) Post Release Monitoring

Monitoring will be be conducted as described for weaned pups.

Injury/Illness during transport:

If during transport a seal becomes sick or injured it will be cared for in transit by veterinary and husbandry staff, equipped with emergency drugs, antibiotics, intubation equipment, fluids for hydration, and IQF herring if tube feeding is necessary. The compromised seal(s) monitored 24 hours/day until it can be delivered to a captive care facility.

Captive care will be conducted using established protocols refined and developed with recent captive care activities for Hawaiian monk seals and other pinniped under the authority of the MMHSRP permit. Eventual release of the seal will be determined according to standards of the MMHSRP.

Detailed Hawaiian Monk Seal Quarantine Protocol

The following are quarantine protocols that will be followed during the captive holding of Hawaiian monk seals, for example during translocation quarantine periods. Quarantine will typically occur in a captive facility, but these protocols can be adapted for use in a shore pen situation if needed. In such cases, reference to "pools" or "tanks" would apply to separate shore pens.

I. QUARANTINE

A. QUARANTINE DEFINITION AND OBJECTIVES

1. Quarantine refers to any isolation or restriction on travel or passage imposed to keep contagious diseases, insect pests, etc. from spreading.

2. Hawaiian monk seals held in captive care must be maintained under strict quarantine at all times to:
    a. Minimize transmission of disease from outside sources- i.e. human contact
    b. Minimize transmission of disease from captive care seals to susceptible animals, including wild seals, humans, etc.
    c. Minimize transmission of disease among the three holding tanks holding facility.

3. All personnel involved in the feeding, handling, and care of these seals must be properly trained in quarantine procedures by an experienced staff. (Quarantine procedures should always be posted in the food preparation or other high profile area.)

B. NMFS QUARANTINE POLICY

Quarantine from Outside Sources

1. All equipment used in the quarantine facility, including feeding, handling, and medical supplies MUST be:
    a. Labeled "MONK SEAL QUARANTINE"
    b. Used exclusively for quarantined seals
    c. Kept monk seal equipment separate from that used for other animals
    d. Properly sanitized before and after entering the quarantine enclosures

2. **NO VISITORS** are allowed in monk seal quarantine area unless previous approval is granted by the on-site supervisor. Non-authorized personnel may be able to view the seals from an approved viewing platform outside the quarantine area.

3. Avoid direct contact with domestic or other captive or wild animals before and after entering Hawaiian monk seal quarantine enclosure. Shower

and change clothes before and after going to another animal care facility if entering the seal enclosures on the same day.

4. No street shoes are to be worn into the enclosures, including the walkway leading to tanks. Wear rubber boots/shoes designated for "monk seal quarantine" use in the enclosures at all times. Minimize wearing quarantined boots/shoes around premises.

5. Dip soles of boots/shoes in dilute Nolvasan footbath upon entering AND leaving all the enclosures.

6. Immediately upon entering the enclosure to tanks wash hands with antibacterial soap. Also wash hands before and after fish preparation, feeding, or handling seals. Always wash hands immediately after leaving a separate tank enclosure.

7. Any person that will potentially come in direct contact with quarantined seals for any procedure must wear sanitary protective clothing (i.e. coveralls, handling gloves, shoes) designated for quarantine monk seal use only. This clothing should be kept clean and in a designated area away from potential sources of contamination.

8. Protective clothing worn during procedures should be immediately washed in the washer with soap and dilute bleach solution following handling events.

9. Any new equipment or tools brought into the quarantine area must first be sanitized with a dilute bleach or Nolvasan solution.

Quarantine Between Pools

1. Separate equipment will be used to care for seals in each of the pools. This includes cleaning and feeding supplies (brooms, hoses, buckets, etc.) and handling gear (coveralls, booties, gloves). Keep this equipment separate.
2. A dilute Nolvasan footbath will be placed outside of each tank to be stepped before and after leaving the enclosure. A freshwater bath will be placed as a final rinse before entering the pen.
3. Personnel must change protective clothing when caring for seals housed in different pools. However, personnel caring for isolated seals (sick) are prohibited from entering the "healthy" seal area (the stairs, walkway, fish house, and other pools).
4. Seals housed in separate enclosures will not be mixed unless deemed necessary by the veterinary staff.

II. OBSERVATIONS AND CONDUCT AROUND SEALS

A. OBSERVATIONS OF THE SEALS

1. In the morning and prior to each feed, conduct a thorough inspection of the seals and pens before proceeding with further activity. Following each feed or handling event, monitor the seals' behavior closely. Perform a final inspection before leaving for the day.

2. Throughout the day monitor and record the behavior of each seal. Observe the condition and activity level of the seals and presence of feces, urine, spew, and harmful debris in or around pens. When possible, note ID of seal that produced scat, spew, etc. Note the color, consistency, and amount of scat, urine, and spew.

3. Note anything unusual in a seal's normal appearance (eyes, nasal discharge, bite wounds, etc.) and behavior (lethargic, unresponsive, etc.). Notify attending veterinarian and animal care manager immediately of any abnormal changes in a seal's health.

4. Succinctly record any observations on the "Observation" form in each seal's chart, including the time and observer's initials. Frequently used acronyms: BAR = bright, alert, and responsive; QAR = quiet, alert, and responsive.

B. CONDUCT AROUND THE SEALS AT ALL TIMES

Every possible effort should be made to minimize the habituation of the seals by reducing human-seal interactions.

1. When in enclosures, **DO NOT MAKE PHYSICAL CONTACT WITH SEALS** unless necessary for procedures requiring handling. Minimize going into the enclosure and the amount of time you spend in the enclosure as much as possible.

2. If seals are resting or sleeping, do not make loud noises or startling gestures, and move slowly when in close proximity to them to minimize stress.

3. Minimize talking when working with or near the seals and the enclosure.

4. Whenever possible, observers should remain as inconspicuous and unobtrusive as possible to observe seals' normal behaviors in captivity and minimize their stress in captivity.

5. Each person entering an enclosure with the seal should be carrying a herding board, which should within arms-reach at all times.

6. Outside of feeding sessions seals may display undesirable behaviors which include: a) approaching too closely or too rapidly; b) mouthing hoses, brooms, or boots; and c) stereotypic behaviors which include repetitive splashing or slapping at the walls of the enclosure. If seals approach too closely or too rapidly use a herding board to keep the seal away. The mouthing of brooms, hoses, and boots should be discouraged by preventing opportunities for seals to bite at these objects in the first place. Stereotypic behaviors are a sign of boredom and may be reduced by providing seals with their approved environmental enrichment devices (EEDs).

III. CLEANING THE QUARANTINE AREA

A. DISHES

1. Wash all dishes used for feeding and handling with dish soap and water. Rinse thoroughly.
2. Soak all metal and rubber equipment (bolus syringes, knives, tongs, etc.) in dilute Nolvasan for at least 10 minutes.
3. Soak all plastic equipment (cutting boards, buckets, cooler, etc.) in dilute bleach for at least 10 minutes.
4. Rinse all dishes thoroughly to remove the dilute bleach or Nolvasan.
5. Allow all dishes to air-dry.
6. Stomach tubes should be washed with soap and water, rinsed thoroughly, and then boiled for 10 minutes. Be sure to scrub the inside of the feeding tubes. Keep sanitized stomach tubes wrapped in a clean towel.
7. Bolus Syringe Care: after the syringes have been washed and dried as described above, lubricate the O-ring with mineral oil and put the syringes back together for safe storage. Be careful when handling the syringes as they are fragile and can crack easily.

B. DAILY CLEANING AND MAINTENANCE

Seal Enclosure Cleaning

Do not allow seals to mouth or bite brooms or fresh water hoses. If the hose enters the pool remove it immediately. Never allow the broom, hose, or any equipment to remain unattended in a seal enclosure. Return all equipment to its storage area after use (i.e. coil and hang hose). Always keep the enclosure doors securely bolted because the seals are very adept at exiting the enclosures through a door left ajar. When cleaning, take the opportunity to inspect urine for color and feces for consistency and parasites. Always record feces and urine in the observations form in the seal's chart and make special note of any unusual findings.

1. After the morning feed, the entire pen enclosure should be checked for any scat, urine, fish parts, and wind-blown debris. If necessary, use a broom and fresh water hose to clean the seal enclosure. Thoroughly rinse all fish scales, blood, and debris from the decks, walls, and ledge of the

enclosure and walkway with the fresh water hose after each feed. Special care should be taken to clean scales from doors, door handles, and bolts.
2. Before leaving in the evening, the deck and pool walls and floor should be hosed down and any spattered blood, scales, scat, or other debris should be scrubbed away.

Miscellaneous Cleaning

1. Rinse off the walkway and stairs leading to the seal enclosure at least once a day. Scrub the walkway with broom and water as needed.
2. Refill footbaths 1-2 times a day or as needed with dilute Nolvasan (usually once first thing in the morning is fine). Add 3 oz Nolvasan to 1 gallon water. Be sure to have a final water rinse before the pen entrance. Old dilute Nolvasan should be poured onto the pavement next to and at the base of the stairs (don't dump it down the stairs).

Food Prep Area Cleaning

1. Freezers and refrigerators must remain clean and neat at all times. All feeders are responsible for maintaining freezer cleanliness on a daily basis. Keep freezers free of ice buildup as much as possible.
2. Wipe down all counter and table surfaces after each feeding. Be especially mindfully of cleaning any fish scales and spattered blood from the all surfaces after each feeding.
3. Mop the fish prep area floor floor with a dilute bleach solution (1 part bleach to 30 parts water) after the morning feeding.
4. Empty the garbage and take it to the outside dumpster at the end of each day (or every other day).
5. All damaged or unused fish and fish parts including the scales should be put in the "Fish Waste" bag in the chest freezer and should NOT be thrown away in the regular trash. The "Fish Waste" bag should be taken to the facility dumpster every Wednesday before 0800 for immediate pick-up.

Coverall Cleaning

1. Wash all coveralls, kneepads, gloves, and booties following each use with dilute bleach and laundry detergent in the washing machine at the end of each day. Do not set quarantine items down outside the quarantine area.
2. Dry all items in the dryer except the booties with rubber soles. The booties should be air-dried on the floor in the fish house.
3. In between handling events on the same day, hang the coveralls in the sun to dry.
4. Store clean, dry coveralls, etc. in appropriate area labeled "Clean Handling Equipment" (in the cabinet).

C. WEEKLY CLEANING

Cleaning Seal Enclosure

The monk seal pools and enclosures should be drained and cleaned once a week. A minimum of 3 people should conduct the weekly cleaning. A dilute bleach solution should be used. When using bleach solutions always direct the rinse

water away from seals because the bleach solution is a skin and eye irritant. Use the large, soft-bristled brushes for all cleaning.

1. Empty all Nolvasan footbaths except for one at the base of the stairs. Once the footbaths are emptied, minimize leaving and reentering the quarantine area as much as possible.
2. Spray the walkway with the dilute bleach mixture. Be sure to spray the walls, ledge, and doors. Direct the bleach spray away from the seal enclosure. Scrub the walkway deck and ledge. Let the bleach stand for 10 minutes.
3. Hose off the dilute bleach thoroughly – perform at least 2 washes of all surfaces.
4. When you are convinced that all the bleach has been rinsed away, move the seals into the holding area. Be sure to keep the seals cool with running water while cleaning the enclosure and monitor the seal's affect and behavior regularly.
5. Once the seals are secure in the holding area, begin draining the pool and start bleaching the deck. Spray the entire deck and up to the fiberglass line on the walls. Be careful to avoid sending bleach (from the sprayer or wind) into the seals' holding area. Spray the cages, any enrichment tools, and drain covers. Scrub the deck floor and allow the bleach to stand for 10 minutes.
6. As the pool continues to drain, thoroughly rinse the bleach from the deck area. Perform at least 2 rinses of all surfaces.
7. When the pool is drained, scrub the walls and floor of the pool to remove all scales and spattered blood. Using the hand-held brushes works well for scrubbing the walls.
8. Spray the pool walls and floor with dilute bleach and scrub all surfaces again. Let the bleach stand for 10 minutes.
9. Rinse the bleach from the pool walls (at least twice) while simultaneously turning on the water inflow. Leave the bottom drain open, with the drain cover in place, for several minutes to thoroughly rinse all the bleach down the drain. When you feel confident that all the bleach has been washed away, close the bottom drain, and begin filling the pool.
10. Flush the deck for several minutes to remove any bleach remnants. Remove all cleaning equipment then bring the water level with the deck and re-introduce the seals to the enclosure.
11. After all the tanks and walkways have been cleaned, thoroughly rinse the bleach solution from the brooms and all cleaning equipment. Separate cleaning supplies are used in each of the tanks. Replace the Nolvasan solution (3 oz/1 gal) in all footbaths.
12. Record the seals' behavior, the duration spent in the holding area, and any other relevant information from the cleaning event (scat, spew, urine, etc.) on the observations form in each seal's chart.

IV. WATER SAMPLING SEAL TANK

Sampling should occur regularly each week at least a couple of days after the weekly enclosure cleaning. We collect one sample from the pool and one from

the inflow in addition to a temperature control sample collected from the pool. These samples will be sent for fecal coliform testing.

1. Try to be as sterile as possible: wear gloves, do not open lid to bottle until immediately before collection, do not contaminate inside of lid or bottle, don't set the lid down, etc.
2. Collect the inflow sample by removing the lid and holding the bottle under the water inflow to fill it. Decant any excess water being careful not to touch the lip of the bottle or the lid.
3. Sample the pool (pool and temp control sample) 180^0 from the water inlet. With the lid still in place, submerge the bottle about 1 foot deep. Unscrew the lid underwater with the bottle positioned counter-current to fill the bottle. Replace the lid underwater. Remove the bottle from the water and decant the excess water being careful not to contaminate the bottle or lid.
4. Immediately place the samples in the small red cooler with blue ice (provided by HF&WTL) for transport to the lab. If transport is not immediate, place the samples in the refrigerator (sampling fridge, not fish storage fridge). Store sample bottles in the cooler and ice pack in freezer until next sampling.
5. Complete all the necessary paperwork and be sure to label each bottle (pool, inflow, temp control).
6. These counts should not exceed 1000 MF/100ml. If fecal coliform counts exceed 1000 MF/100ml, sampling must be repeated within 24 hours. Promptly notify the veterinary staff if counts are above 1000 MF/100ml. Enter the date, time, coliform count, and any pertinent comments in the HMS Water Testing spreadsheet.

V. SEAL ILLNESS/EMERGENCY CARE

1. In case of an emergency or suspected illness, refer to the phone list and call the attending veterinarian or veterinary technician immediately to relate symptoms or circumstances of emergency or illness. Follow the emergency chain-of-command protocol.
2. A veterinarian or trained veterinary staff will perform any needed blood sampling.
3. A crash kit and emergency drugs are kept in the fish kitchen. All other medical supplies for blood sampling, fluid and antibiotic administration, monk seal medications, and additional medical supplies are kept within each facility.

EXAMPLE

Physical Examination Form

Circle as appropriate

Body outline: Swelling, Wound, Change from previous day
If yes, describe: _____

Flippers: Normal use of all 4 flippers with full-range of motion, Favoring one flipper (describe), Lacerations, Swelling, Ulcers/sores, Signs of pain or discomfort

Discharges: Ears, Nares, Eyes, Umbilicus, Rectum, Vagina, Other
If yes, describe amount:_____ mL, Color:_____,
Consistency:_____

Feces: Describe amount:_____ mL, Color:_____,
Consistency:_____

Urine: Color:_____

Eyes:

Right: Discharge: Clear tears, Crustiness around eyes, Purulent discharge Redness or congestion of conjunctiva, Swelling of conjunctiva, Prominence of third eyelid, Corneal opacity/ cloudiness, Corneal ulcer, Lacerations, Swelling of eyelids, Squinting or photosensitivity, Any obvious loss of vision

Left: Discharge: Clear tears, Crustiness around eyes, Purulent discharge Redness or congestion of conjunctiva, Swelling of conjunctiva, Prominence of third eyelid, Corneal opacity/ cloudiness, Corneal ulcer, Lacerations, Swelling of eyelids, Squinting or photosensitivity, Any obvious loss of vision

Mouth: Color of mucous membranes: Pink, Red, Pale pink/White
Teeth: Broken, Erupting. List
site:_____

Behavior: Alert, Bright, Lethargic, Depressed, Active, Inactive, Stereotypic behavior, Disorientation, Vocalizations, Other abnormal behavior for each individual seal, Any marked change from previous days
Describe:_____
_

Other comments (environmental conditions, respiration rate, heart rate, etc.):

_____
_____
_____
_____
_____
_____
_____

Animal ID: _____ **Date:**_____ **Name of Observer:**_____
Time:_____

Appendix G
PMNM 2011-001 Permit and Other Papahānaumokuākea Best Management Practices

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PAPAHĀNAUMOKUĀKEA
Marine National Monument

DEC 2 3 2010

Mr. Tom Edgerton
Superintendent, Papahānaumokuākea Marine National Monument
Department of Interior
U.S. Fish and Wildlife Service

Administrator (TBD)
Division of Aquatic Resources
Department of Land and Natural Resources
State of Hawaii

Mr. Paul Conry
Administrator, Division of Forestry and Wildlife
Department of Land and Natural Resources
State of Hawaii

Ms. T. 'Aulani Wilhelm
Superintendent, Papahānaumokuākea Marine National Monument
Department of Commerce
National Oceanic and Atmospheric Administration

ADDRESS:
Papahānaumokuākea Marine National Monument Office
6600 Kalaniana'ole Hwy, Suite 300
Honolulu, HI 96825

Dear Co-Trustee Representatives:

The National Oceanic and Atmospheric Administration (NOAA), the U.S. Fish and Wildlife Service (FWS), and the State of Hawaii (collectively, the Co-Trustees) have approved the issuance of permit number PMNM-2011-001 to conduct activities within Papahānaumokuākea Marine National Monument ("Monument") for conservation and management purposes. Activities are to be conducted in accordance with the permit application and all supporting materials submitted to the Monument, and the terms and conditions of permit number PMNM-2011-001 attached.

Your permit contains specific special conditions and reporting requirements. Please review them closely and fully comply with them while undertaking permitted activities.

If you have any questions about this permit please contact Ray Born at (808) 792-9488, Justin Rivera at (808) 397-2632, Lasha-Lynn Salbosa at (808) 397-2633 or Danielle Carter at (808) 397-2647. Thank you for your continued cooperation with NOAA, FWS, and the State of Hawaii.

William J. Aila Jr.
Interim Chairperson
Board of Land and Natural Resources
Department of Land and Natural Resources
State of Hawaii

Date

Thomas R. Edgerton 12/23/10

Tom Edgerton Date
Superintendent, Papahānaumokuākea Marine National Monument
Department of Interior
U.S. Fish and Wildlife Service

for 12-22-10

T. ʻAulani Wilhelm Date
Superintendent, Papahānaumokuākea Marine National Monument
Department of Commerce
National Oceanic and Atmospheric Administration

PAPAHĀNAUMOKUĀKEA
Marine National Monument

DEC 2 3 2010

CONSERVATION AND MANAGEMENT PERMIT

Papahānaumokuākea Marine National Monument Co-Trustee Representatives:

Mr. Tom Edgerton
Superintendent, Papahānaumokuākea Marine National Monument
Department of Interior
U.S. Fish and Wildlife Service

Administrator (TBD)
Division of Aquatic Resources
Department of Land and Natural Resources
State of Hawaii

Mr. Paul Conry
Administrator, Division of Forestry and Wildlife
Department of Land and Natural Resources
State of Hawaii

Ms. T. 'Aulani Wilhelm
Superintendent, Papahānaumokuākea Marine National Monument
Department of Commerce
National Oceanic and Atmospheric Administration

ADDRESS:
Papahānaumokuākea Marine National Monument Office
6600 Kalaniana'ole Hwy, Suite 300
Honolulu, HI 96825

Permit Number:
PMNM-2011-001

Effective Date:
January 1, 2011

Expiration Date:
December 31, 2011

Project Title: Co-Trustee conservation and management activities in Papahānaumokuākea Marine National Monument

This permit is issued for activities in accordance with Proclamation 8031 ("Proclamation") establishing Papahānaumokuākea Marine National Monument ("Monument") under the Antiquities Act of 1906, 16 USC §§ 431-433 ("Antiquities Act") and implementing regulations (50 CFR Part 404). All activities must be conducted in accordance with the Proclamation and the regulations (attached). No activity prohibited by the Proclamation or 50 CFR Part 404 is allowed except as specified below. Chapter 13-60.5, Hawaii Administrative Rules remains in effect for activities in State waters.

Subject to the terms and conditions of this permit, the National Oceanic and Atmospheric Administration (NOAA), the U.S. Fish and Wildlife Service (FWS), and the State of Hawaii (collectively, the Co-Trustees) hereby authorize the permittee listed above to conduct conservation and management activities within the Monument. All activities are to be conducted in accordance with this permit. The permit application is incorporated into this permit and made a part hereof; provided, however, that if there are any conflicts between the permit application and the terms and conditions of this permit, the terms and conditions of this permit shall be controlling.

PERMITTED ACTIVITY DESCRIPTION:

The following activities are authorized by this permit:

1. ENTRANCE
   Permittees, their designated agency staff and contractors necessary for the permitted activities, as well as residents of Midway Atoll, may enter the Monument. See Permitted Personnel List (attached).

   All personnel must be identified and information provided to the Monument permit coordinators prior to entry to the Monument. The permittees shall ensure that any person assigned to any conservation and management activities allowed under this permit is qualified to perform the assigned role and is limited to the scope of their position and respective project, and all other applicable policies, protocols, permits, and regulations.

   All activities must be consistent with existing State and federal laws. As such, management agencies will confirm compatibility and consistency prior to the conduct of individual activities under this permit.

   The MMB may monitor activities under the permit. Any member of the MMB may, for a period not to exceed 48 hours, verbally require temporary modification or cessation of activities identified in the permit if, in the opinion of the MMB member, such action is necessary to limit effects on Monument resources beyond the intended scope of the permit, to protect governmental equipment, or to ensure the safety of personnel. Such action will be followed as soon as possible by MMB emergency consideration of the temporary permit modification or temporary permit cessation. If the MMB concurs with

the temporary action taken by the MMB member, the Co-Trustees may amend the permit with the necessary changes or withdraw it. A decision by the Co-Trustees to amend the permit or to allow the activity to continue unchanged will include the necessary findings that the activity and its effects satisfy Monument permit issuance criteria and do not risk the safety of governmental employees or damage to governmental equipment.

2. OPERATIONS
    a. Field station operations for resource conservation supported by on-site management.
    b. Facility maintenance activities for assets and facilities of the National Wildlife Refuge System and Kure Atoll and its agents necessary for meeting mission and purposes of the refuges, sanctuary, and Monument. Examples of activities to be undertaken include, but are not limited to:
        i. Maintenance and repair/replacement (e.g. carpentry, electrical, plumbing, welding, general construction) of facilities and their components;
        ii. Building and other facilities deconstruction and reconstruction;
        iii. Airport maintenance, including improvements such as runway lighting replacement and taxiway maintenance (including repaving and painting/marking);
        iv. Painting, including all preparation work such as scraping, washing, etc.; and
        v. Lead-based paint soil remediation, including removal of sand/soil from around many or all affected buildings and proper on-site containment of this material.
    c. Field camp supply and support activities, including but not limited to delivery and removal of supplies, people, waste, and/or assets necessary for operations.
    d. Operations and on-site review of activities, including but not limited to:
        i. Operations and on-site reviews by management and congressional personnel;
        ii. Agency site visits and meetings for management planning and programmatic assessments; and
        iii. On-site management and safety reviews to gauge implementation and effectiveness of Monument management programs.
    e. Operation, maintenance, and use of airfields and runways at Midway Atoll and Tern Island.
    f. Operation of vessels to provide access for conservation and management activities.
    g. Anchoring of authorized vessels on non-coral substrate only. Anchors must be lowered into place.
    h. Sustenance Fishing, as defined by 50 CFR Part 404.11 section (h); allowed only within Midway Atoll Special Management Area for on-island U.S. Fish and Wildlife Service (FWS) personnel and contractors.
    i. Activities involving personnel safety, fitness and health maintenance including, but not limited to:
        i. Jogging at Tern Island, French Frigate Shoals, and Midway Atoll; and

ii. Health and safety operations for personnel, volunteers, contractors, and visitors in the Monument including site safety reviews, adverse weather and emergency response procedures, safety protocols, and continuity of operations plans.

3. RESOURCE SURVEY AND MONITORING

Survey and monitoring of target species and habitats to evaluate status and trends for management purposes. The following activities in direct support of management, monitoring, and characterization may be conducted:

a. Placement, installation, and maintenance of scientific equipment, devices, markers, oceanographic instrument arrays, and remote viewing camera systems;
b. Non-lethal marking and tagging for monitoring purposes;
c. Visual, non invasive marking and tagging for monitoring purposes;
d. Collection of biological, chemical, climatological, or geological samples for: analysis in support of activities under approved management plans; restoration or recovery plans; base line inventory and monitoring of population trends; and habitat conservation and management;
e. Collection of biological voucher specimens that cannot be visually identified on the spot and/or may represent new geographic records or new species;
f. Physical surveys and collections for landfills, storage tanks, contamination, or other potentially hazardous artifacts associated with current and former occupation and use of the Northwestern Hawaiian Islands (NWHI); and
g. Habitat mapping activities for the production of accurate, high-resolution base maps where data collection methods may include optic, acoustic, and metal detector technologies, as well as land and dive operations for ground truthing.

4. NATURAL RESOURCE PROTECTION, RESTORATION AND REMEDIATION

Conduct management actions to promote conservation of Monument resources. This includes activities necessary to understand and carry out protection, restoration, and remediation of species and habitats, such as carrying out existing species recovery and restoration plans or accessing the Monument to conduct federally authorized activities under the Endangered Species Act (ESA).

Examples include, but are not limited to, Hawaiian Monk Seal Recovery Plan, the Laysan Island Ecosystem Restoration Plan (1998), the short-tailed albatross attraction project on Midway, the Laysan duck reintroduction project on Midway, the Nihoa Millerbird recovery project, *Verbesina* control, cattle egret control, rat control, and other non-native species control projects. Restoration, when and where appropriate, will be undertaken using the best available information about pre-disturbance conditions to establish goals. Activities may include:

a. Monk seal disentanglement and health response (including treatment and necropsy), translocation from areas of high risk to safer areas, reuniting nursing mothers and pups, and removal of aggressive males;
b. Population augmentation or reestablishment activities such as capture, translocation, reintroduction, and outplanting;

c. Invasive species controls by mechanical, chemical, and manual methods as needed; and
d. Investigation and monitoring of contamination in abiotic or biotic resources.

Removal of marine debris, trash, and other materials (land and ocean-based) that pose threats to Monument resources, including but not limited to derelict fishing gear. This may include:

a. Disentanglement of threatened and endangered species by authorized personnel, debris tracking via drifter buoys and Unmanned Aerial Vehicles, and monitoring of sites that have been cleared of debris for site recovery rates and effects of removal;
b. Location and removal of debris and hazardous materials. This may be through interagency agreements, such as the Department of Defense (DOD) Innovative Readiness Training (IRT), Formerly Used Defense Sites (FUDS), or the Base Realignment and Closure (BRAC) Programs. Efforts may include activities such as seafloor and island mapping, reconnaissance and removal of materials, and derelict vessel salvage and removal; and
c. Removal of sessile encrusting flora and fauna associated with marine debris.

Provide Emergency Response, Injury Assessment, Mitigation, Restoration, and Monitoring and Post-Response Management:

a. Activities as necessary for emergency response, injury assessment, mitigation, restoration, monitoring, and post-response management in coordination with appropriate federal and / or state resource agencies and as appropriate consistent with NOAA, USFWS, and State of Hawaii Damage Assessment and Restoration regulations, policies, and procedures (e.g., oil spills, ship groundings, damage assessments, monitoring alien species, monitoring coral bleaching events, collection of bleached coral or alien species); and
b. Activities in response to an unusual mortality event (including but not limited to threatened and endangered species, marine mammals, migratory birds), mass stranding, or other urgent species response.

5. CULTURAL AND HISTORICAL RESOURCE IDENTIFICATION AND PROTECTION

To identify, document, interpret, preserve, and protect the Monument's cultural and historic resources, the following activities may be conducted:

a. Collection of post-contact artifacts as needed subject to National Historic Preservation Act (NHPA) consultation when applicable;
b. Monitoring and surveying of historic sites;
c. Conservation of artifacts subject to NHPA consultation and appropriate approvals from other Federal agencies (e.g., U.S. Navy) when applicable;
d. Non-commercial filming and photographic activities for the purposes of further documenting and capturing the history of the NWHI;
e. Location of historic artifacts using passive side scan sonar, metal-detector, or (land-based) ground penetrating radar;

f. Returning seized Monument resources to their natural environment in coordination with appropriate federal and/or state resource agencies, including the Office of Hawaiian Affairs, as appropriate;
g. Maintenance, preservation, and perpetuation of Native Hawaiian cultural sites and practices per the National Historic Preservation Act, Native American Graves Protection and Repatriation Act, Archeological Resources Act, American Indian Religious Freedom Act and applicable sections of the Hawai'i State Constitution, Hawaii Revised Statutes and Hawaii Administrative Rules; and
h. Maintenance and preservation of historic sites on Midway Atoll.

6. OUTREACH AND EDUCATION

To cultivate an informed, involved constituency that supports and enhances conservation of the natural, cultural, and historic resources of the Monument, and to contribute to the Nation's science and cultural literacy, the following activities may be conducted:

a. Collection of information and experiences from the Monument to develop agency web pages, Navigating Change projects, Monument projects, etc;
b. Collection of debris and biological samples and specimens such as albatross boluses for education projects;
c. Conduct news media and VIP site visits to enhance public knowledge and understanding of Monument resources; and
d. Present environmental programs at Midway Atoll.

No further disturbance of the cultural or natural resources of the Monument is allowed.

PERMITTED ACTIVITY LOCATIONS:

Other than entrance into the Monument, the permitted activities listed above are allowed at the following locations:

The permittees may conduct conservation and management activities throughout Papahānaumokuākea Marine National Monument.

GENERAL TERMS AND CONDITIONS:

In accordance with the Proclamation and applicable regulations, the permitted activities listed above are subject to the following general terms and conditions:

1. The permittee must sign and date this permit on the appropriate line below. Once signed and dated, the permittee must provide a signed original copy to the Monument official identified below. The permit becomes valid on the date the last signature is obtained and shall remain valid until the expiration date on the permit.

   Permit Coordinator
   Papahānaumokuākea
   Marine National Monument
   6600 Kalaniana'ole Hwy. Suite 300
   Honolulu, HI 96825

2. This permit is neither transferable nor assignable and must be carried by the permittee while engaging in any activity authorized by this permit. All other persons entering the Monument under the authority of this permit must provide the name of the permittee or the permit number to any authorized enforcement or management personnel upon request.

3. This permit may only be modified by written amendment approved by the Co-Trustees. Modifications to this permit must be requested in the same manner as the original request was made. Any modifications requested by the permittee, such as adding or changing personnel to be covered by the permit or to change the activities that are allowed, must be made in writing.

4. This permit is subject to suspension, modification, non-renewal, or revocation for violation of the Proclamation, implementing regulations, or any term or condition of the permit. Any verbal notification of a violation from an authorized Monument representative may require immediate cessation of activities within the Monument. The issuance of a permit shall not constitute a vested or property right to receive additional or future permits. This permit may, in the sole discretion of the Co-Trustees, be renewed or reissued. However, there is no right to a renewal or re-issuance. Failure to fulfill permit requirements may affect consideration of future permit applications.

5. Permit terms and conditions shall be treated as severable from all other terms and conditions contained in this or any other ancillary permit. In the event that any provision of this permit is found or declared to be invalid or unenforceable, such invalidity or unenforceability shall not affect the validity or enforceability of the remaining terms or conditions of this permit.

6. This permit does not relieve the permittee of responsibility to comply with all federal, state and local laws and regulations. Activities under this permit may be conducted only

after any other permits or authorizations necessary to conduct the activities have been obtained.

7. The permittee may be held liable for the actions of all persons entering the Monument under the authority of this permit.

8. All persons entering the Monument under the authority of this permit are considered under the supervision of the permittee and may be liable in addition to the permittee for any violation of this permit, the Proclamation and implementing regulations in conjunction with this permit. The permittee must ensure that all such persons have been fully informed of the permit terms and conditions prior to entry into the Monument. Each such person must provide written acknowledgment to the permittee, prior to entry into the Monument, that he/she has received a copy of the permit, agrees to abide by all applicable terms and conditions, and may be liable for violations of the permit. The permittee shall maintain all signed acknowledgments and submit them with the summary report described in General Condition #22.b. An acknowledgement form is attached.

9. Notification of entry into the Monument must be provided at least 72 hours, but no longer than one month, prior to the entry date. Any updates to the list of personnel must also be provided at least 72 hours before entering the Monument. Notification of departure from the Monument must be provided within 12 hours of leaving the Monument. Notification may be made via e-mail or telephone by contacting: E-mail: nwhi.notifications@noaa.gov; Telephone: 1-866-478-6944; or 1-808-395-6944. No other methods of notification will be considered valid.

10. The permittee and any person entering the Monument under the authority of this permit shall, before entering the Monument, attend a cultural briefing or view designated cultural informational materials on Papahānaumokuākea regarding the region's cultural significance and Native Hawaiians' spiritual and genealogical connection to the natural and cultural resources. Persons entering the Monument at Midway Atoll may satisfy this requirement upon arrival.

11. All vessels (including tenders and dive boats), engines and anchor lines shall be free of introduced species prior to entry into the Monument. To ensure this, all vessels, engines and anchor lines shall be inspected for potential introduced species prior to departing the last port before entering the Monument. No later than 24 hours prior to entry, the permittee shall provide the Monument Permit Coordinator with a report prepared by the individual conducting the inspection that: a) sets forth when and where the inspection occurred; b) identifies any introduced species observed, including where found; c) summarizes efforts to remove any species observed; and d) certifies the vessel as free of all introduced species. The Monument Permit Coordinator shall review the report and, based on the review, may delay the entry into the Monument until all concerns identified by the Monument Permit Coordinator have been addressed.

12. All hazardous materials, biohazards and sharps, must be pre-approved by the Co-Trustees. For purposes of this permit, "hazardous material" has the same meaning as the

definition found at 49 CFR §105.5 (U.S. Department of Transportation). All hazardous materials, biohazards and sharps must be stored, used, and disposed of according to applicable laws and Monument-approved protocols. The permittee or a designated individual entering the Monument under the authority of this permit must be properly trained in the use and disposal of all such materials proposed. Proof of appropriate training may be required by the Co-Trustees. No such material may be left in the Monument after the departure of the permittee unless it has been previously approved by Monument staff. Immediately after the project is complete the permittee must remove all such materials from the Monument. The permittee will be responsible for all costs associated with use, storage, transport, training, disposal, or HazMat response for these materials.

13. All equipment or supplies brought into the Monument, or structures of any kind built in the Monument by the permittee are the responsibility of the permittee. All materials that are brought to the Monument by the permittee must be removed by the permittee except as otherwise permitted. Any permanent structures, equipment, or supplies that require maintenance, are determined to be unserviceable, or are a safety hazard, must be immediately repaired or removed from the Monument by the permittee. No structures, equipment, or supplies may be left in the Monument following the completion of the project except as listed in the permit.

14. If Monument staff is present at the field site, the permittee must meet with them before beginning permitted activities. Even with a valid permit, authorized Monument staff may prohibit entry into any location(s) within the Monument as they may deem appropriate to conserve or manage resources, particularly in areas where cumulative impacts of permitted activities are concentrated.

15. In order to facilitate monitoring and compliance, any person entering the Monument under the authority of this permit, including assistants and ship's crew shall, upon request by authorized Monument enforcement personnel, promptly: a) allow access to and inspection of any vessel or facility used to carry out permit activities; b) produce for inspection any sample, record, or document related to permit activities, including data, logs, photos, and other documentation obtained under, or required by, this permit; and c) allow inspection on board the vessel or at the permittee's premises of all organisms, parts of organisms, and other samples collected under this permit.

16. It is prohibited to possess or consume alcohol in the Hawaiian Islands National Wildlife Refuge in accordance with the refuge policy. Any violations will result in immediate removal of the offender from the Monument at the individual's own cost. Offenders may not be readmitted to the Monument.

17. All persons entering the Monument under the authority of this permit are responsible for the cost of removing themselves from the Monument at the conclusion of the term of the permit or upon revocation or suspension of the permit. All such persons are also responsible for the cost of removing themselves from the Monument in the event of a

necessary medical evacuation, emergency evacuation, including weather, or for the cost of any necessary search and rescue operation.

18. Except as expressly required by applicable law, the Co-Trustees are not liable for any damages to equipment or injuries to the permittee and persons entering the Monument under the authority of this permit. The permittee and any person entering the Monument under the authority of this permit shall release, indemnify, and hold harmless the National Oceanic and Atmospheric Administration, the Department of Commerce, the U.S. Fish and Wildlife Service, the Department of the Interior, the United States Government, the State of Hawaii, and their respective employees and agents acting within the scope of their duties from and against any claims, demands, actions, liens, rights, subrogated or contribution interests, debts, liabilities, judgments, costs, and attorney's fees, arising out of, claimed on account of, or in any manner predicated upon the issuance of this permit or the entry into or habitation upon the Monument or as the result of any action of the permittee or persons participating in the activity authorized by this permit. In the event that a government employee, acting in his official capacity, is the permittee, or is entering the Monument under the authority of this permit, then he shall be subject to all applicable federal and State laws that pertain to claims by or against him predicated upon the issuance of this permit or entry into or habitation upon the Monument.

19. Monument managers or their designees may verbally require the permittee to modify or cease activities not identified in this permit if, in the opinion of the managers or designees, such action is necessary to limit disturbance to or protect Monument resources, to protect government equipment, or to ensure the safety of personnel. After providing such verbal instructions, the managers or designees will provide the permittee with a written modification, suspension or revocation to this permit at the earliest practicable opportunity. The failure to follow verbal instructions or modified permit terms, or to cease activities upon suspension or revocation of this permit, may constitute a violation of this permit, the Proclamation, the regulations, or other applicable law.

20. Disturbance of any cultural or historic property, including but not limited to Native Hawaiian cultural sites, burials, archaeological deposits, maritime heritage sites, and WWII structures and features, such as stone walls and mounds, stone uprights, bunkers, batteries, camp sites, hospitals, housing areas, and radio towers; or the disturbance or collection of any historic or cultural materials and artifacts, including but not limited to bottles, dishes, cartridges, hospital materials, carvings, human remains, or Native Hawaiian bone or stone implements, found within the Monument, including the sale or trade in such items, is prohibited.

21. All Monument resources within the jurisdiction of the State of Hawaii are held in trust under the Hawai'i State Constitution, Article XI, Sec. 1. The State of Hawaii and the Government of the United States reserve ownership or control, as the case may be, of Monument resources, both living and nonliving, that may be taken or derived from those found in the Monument.

22. The permittee must satisfy the following reporting requirements:

a. Within thirty (30) days after the expiration date of this permit, the permittee must submit a summary report of activities conducted under this permit. The report shall be submitted using the Monument permit report template, if applicable.

b. For permitted vessels, the permittee having authority over the vessel must maintain and submit a cruise log within thirty (30) days after the expiration date of this permit. The log shall include but is not limited to: description of cruise activities, geographic locations of those activities, anchoring locations, and small boat dive locations. The permittee shall also maintain a daily vessel discharge log, which must be submitted with the cruise log.

c. Annual Report. The comprehensive annual report is a summary of all activities undertaken, including but not limited to: dates of all arrivals and departures from islands and atolls within the Monument, names of all persons involved in permitted activities, details of all specimens collected, handled, etc., any other pertinent information, GPS locations of all samples collected, transects, etc., results of work to date, copy of all data collected, and a proposed schedule of publication or production of final work. The report shall include a concise summary or abstract for use in Monument reports. Two hard copies and one electronic copy (Microsoft Word preferred, but not required), must be submitted to the Co-Trustees. The annual report is due by the end of the second week of January of the calendar year that follows the year that the permit was in effect or before a new permit is issued, whichever comes first. Subsequent annual reports are required each year until all data collected under research permits are fully analyzed.

d. For activities on State lands or within State waters, the permittee must submit a monthly report on the specified form.

e. The permittee may debrief the Co-Trustees following the completion of all activities in the Monument covered under this permit. The permittee may schedule the debriefing upon submitting the annual report.

f. The permittee must submit two copies of any article, publication, or other product created as a result of the information gained or work completed under this permit, including materials generated at any time in the future following expiration of this permit.

g. Any publications and/or reports resulting from activities conducted under the authority of this permit must include the notation that the activity was conducted under permit number PMNM-2011-001. This requirement does not apply to publications or reports produced by the news media.

h. All required submissions (including plans, logs, reports, and publications) shall be provided to the Monument official at the address indicated in General Condition #1.

23. All data acquired or created in conjunction with this permit will be submitted with the summary report, and annual report. Photographic and video material is considered data. The permittee retains ownership of any data, (including but not limited to any photographic or video material), derivative analyses, or other work product, or other copyrightable works, but the Federal Government and the State of Hawai'i retain a lifetime, non-exclusive, worldwide, royalty-free license to use the same for government purposes, including copying and redissemination, and making derivative works. The permittee will receive acknowledgment as to its ownership of the data in all future use. This requirement does not apply to data acquired or created by the news media.

24. Because photographic or video material that is created for personal use (i.e., not specifically acquired or created in conjunction with this permit) could unintentionally collect data that is also valuable for management purposes, the Co-Trustees reserve the right to request copies of any such material and the permittee agrees to provide a copy of such material within a reasonable time. The Co-Trustees may use such material for management purposes.

25. Any question of interpretation of any term or condition of this permit will be resolved by the Co-Trustees.

SPECIAL TERMS AND CONDITIONS:

1. This permit is not to be used for nor does it authorize the sale of collected organisms. Under this permit, the authorized activities must be for noncommercial purposes not involving the use or sale of any organism, by-products, or materials collected within the Monument for obtaining patent or intellectual property rights.

2. The permittees may not convey, transfer, or distribute, in any fashion (including, but not limited to, selling, trading, giving, or loaning) any coral, live rock, or organism collected under this permit without the express written permission of the Co-Trustees.

3. To prevent introduction of disease or the unintended transport of live organisms, the permittee must comply with the disease and transport protocols attached to this permit.

4. Tenders and small vessels must be equipped with engines that meet EPA emissions requirements.

5. Refueling of tenders and all small vessels must be done at the support ships and outside the confines of lagoons or near-shore waters in the State Marine Refuge

6. No fishing is allowed in State Waters except as authorized under State law for subsistence, traditional, and customary practices by Native Hawaiians.

7. If there is any Hawaiian monk seal or any other protected species in the area when performing any permitted activity, the activity shall cease until the animal(s) depart the area, except as permitted for specific management of that species.

8. To ensure the protection of Monument resources, the permittee must conduct all activities in accordance with the following Monument Best Management Practices and guidelines, as attached:
    a. Protocol for Acquiring Avian Blood Samples
    b. Human Hazards to Seabirds Briefing
    c. Boat Operations and Diving Activities
    d. Protocol to Reduce Impact to Laysan Finch
    e. General Storage and Transport Protocols for Collected Samples
    f. Special Conditions and Rules for Moving Between Islands and Atolls and Packing for Field Camps
    g. Protocols Necessary for Conducting Trolling Research and Monitoring
    h. Best Practices for Minimizing the Impact of Artificial Light on Sea Turtles
    i. Disease and Introduced Species Prevention Protocol for Permitted Activities in the Marine Environment
    j. Precautions for Minimizing Human Impacts on Endangered Land Birds
    k. Special Conditions and Rules for Small Boat Operations at Tern Island

9. All Permittees going to Midway will have shoes and luggage inspected for invasive species prior to departure or immediately upon arrival in Midway.

10. For all activities requiring landing on uninhabited islands an authorized staff escort trained for each particular uninhabited island will be included on the landing team.

11. Permittee is required to work in conjunction with the U.S. Fish and Wildlife Service regarding any arrangements at sites within the Hawaiian Islands and Midway Atoll National Wildlife Refuges, and with the State of Hawai'i Kure Atoll Seabird Sanctuary Manager at Kure Atoll. The Refuge Managers for the above locations listed in the Permitted Activity Locations section must be notified at least 72 hours and not more than 30 days prior to arrival. Upon departing, notification to the appropriate Refuge Manager is required. Contact information for notifications are listed below:
    a. French Frigate Shoals: Paula Hartzell, Tern Island Deputy Refuge Manager; email Paula_Hartzell@fws.gov, or telephone 808-792-9554.

    b. Midway Atoll: Acting Midway Refuge Manager, John Klavitter; email John_Klavitter@fws.gov, or telephone 808-954-4817.

    c. Laysan Island: Laysan Biotech, Cindy Rehkemper; email Cindy_Rehkemper@fws.gov and Laysanfws@stratosnet.com , or telephone 808-792-9487.

    d. Kure Atoll: State Seabird Sanctuary Manager, Cynthia Vanderlip; email kureatoll.dlnr@amosconnect.com.

Your signature below, as permittee, indicates that you accept and agree to comply with all terms and conditions of this permit. This permit becomes valid on the date when signed by the last Monument Official. Please note that the expiration date on this permit will not be extended by a delay in your signing below.

Thomas R. Edgerton 12/23/10

Mr. Tom Edgerton Date
Superintendent, Papahānaumokuākea Marine National Monument
Department of Interior
U.S. Fish and Wildlife Service

Administrator (TBD) Date
Division of Aquatic Resources
Department of Land and Natural Resources
State of Hawaii

Mr. Paul Conry Date
Administrator, Division of Forestry and Wildlife
Department of Land and Natural Resources
State of Hawaii

Ms. T. 'Aulani Wilhelm Date
Superintendent, Papahānaumokuākea Marine National Monument
Department of Commerce
National Oceanic and Atmospheric Administration

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Mr. Tom Edgerton — Date
Superintendent, Papahānaumokuākea Marine National Monument
Department of Interior
U.S. Fish and Wildlife Service

03JAN11

for Administrator (TBD) — Date
Division of Aquatic Resources
Department of Land and Natural Resources
State of Hawaii

Mr. Paul Conry — Date
Administrator, Division of Forestry and Wildlife
Department of Land and Natural Resources
State of Hawaii

Ms. T. 'Aulani Wilhelm — Date
Superintendent, Papahānaumokuākea Marine National Monument
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Superintendent, Papahānaumokuākea Marine National Monument
Department of Interior
U.S. Fish and Wildlife Service

Administrator (TBD) — Date
Division of Aquatic Resources
Department of Land and Natural Resources
State of Hawaii

Paul J Conry — 1/3/11

Mr. Paul Conry — Date
Administrator, Division of Forestry and Wildlife
Department of Land and Natural Resources
State of Hawaii

Ms. T. 'Aulani Wilhelm — Date
Superintendent, Papahānaumokuākea Marine National Monument
Department of Commerce
National Oceanic and Atmospheric Administration

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Mr. Tom Edgerton — Date
Superintendent, Papahānaumokuākea Marine National Monument
Department of Interior
U.S. Fish and Wildlife Service

Administrator (TBD) — Date
Division of Aquatic Resources
Department of Land and Natural Resources
State of Hawaii

Mr. Paul Conry — Date
Administrator, Division of Forestry and Wildlife
Department of Land and Natural Resources
State of Hawaii

for — 1-11-11

Ms. T. 'Aulani Wilhelm — Date
Superintendent, Papahānaumokuākea Marine National Monument
Department of Commerce
National Oceanic and Atmospheric Administration

Attachments (15):

1. Papahānaumokuākea Marine National Monument Rules and Regulations
2. Maps of the Papahānaumokuākea Marine National Monument
3. Permit Acknowledgment Form
4. Permitted Personnel List
5. Protocol for Acquiring Avian Blood Samples
6. Human Hazards to Seabirds Briefing
7. Boat Operations and Diving Activities
8. Protocol to Reduce Impact to Laysan Finch
9. General Storage and Transport Protocols for Collected Samples
10. Special Conditions and Rules for Moving Between Islands and Atolls and Packing for Field Camps
11. Protocols Necessary for Conducting Trolling Research and Monitoring
12. Best Practices for Minimizing the Impact of Artificial Light on Sea Turtles
13. Disease and Introduced Species Prevention Protocol for Permitted Activities in the Marine Environment
14. Precautions for Minimizing Human Impacts on Endangered Land Birds
15. Special Conditions and Rules for Small Boat Operations at Tern Island

William J. Aila Jr.
Interim Chairperson
Board of Land and Natural Resources
Department of Land and Natural Resources
State of Hawaii

Thomas R. Edgerton 12/23/10

Tom Edgerton
Superintendent, Papahānaumokuākea Marine National Monument
Department of Interior
U.S. Fish and Wildlife Service

JJ Watland for 12-22-10

T. 'Aulani Wilhelm
Superintendent
National Oceanic and Atmospheric Administration
Papahānaumokuākea Marine National Monument

Appendix G
Part 2: Papahānaumokuākea Marine National Monument Special Conditions, Rules for Moving Between Islands and Atolls, and Packing For Field Camps

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The islands and atolls of the Papahanaumokuakea Marine National Monument (Monument) and the Hawaiian Islands National Wildlife Refuge are special places providing habitat for many rare, endemic plants and animals. Many of these species are formally listed as Endangered under the Endangered Species Act. Endemic plants and insects, and the predators they support, are especially vulnerable to the introduction of competing or consuming species. Such introductions may cause the extinction of island and reef endemics, or even the destruction of entire island or reef ecological communities. Notable local examples include: the introduction of rabbits to Laysan Island in 1902 which caused the extinction of numerous plant and insect species, and 3 endemic landbird species; the introduction of rats to many Pacific Islands causing the elimination of many burrowing seabird colonies; the introduction of the annual grass, sandbur, to Laysan Island where it has crowded out native bunch grass thus, eliminating nesting habitat for the Endangered Laysan finch; and, the introduction and proliferation of numerous ant species throughout the Pacific Islands to the widespread detriment of endemic plant and insect species.

Several of the islands within the Monument are especially pristine, and as a result are rich in rare and special plants and animals. Nihoa Island has at least 17 endemic and rare insect species, 5 Endangered plants and 2 Endangered birds. Necker Island has Endangered plants and 11 endemic insects. Laysan Island has Endangered plants, 9 endemic arthropods and the Endangered Laysan finch and Laysan duck. Other islands in the Monument such as Lisianski, and islets in Atolls such as Pearl and Hermes Reef and French Frigate Shoals provide homes for a variety of endemic and/or endangered species and require special protection from alien species.

Other Pacific Island such as Kure and the "high islands" (Oahu, Hawaii, Maui, Kauai, etc.) as well as, certain islands within Midway Atoll, Pearl and Hermes Reef and French Frigate Shoals have plants and/or animals that are of high risk for introduction to the relatively pristine islands discussed above. Of special concerns are snakes, rats, cats, dogs, ants and a variety of other insect and plant species. Harmful plant species of highest concern that we know of are *Verbesina encelioides, Cenchrus echinatus, and Setaria verticillata.*

The Co-trustees are responsible for the management and protection of the islands, reefs and wildlife of the Monument. No one is permitted to set foot within the Monument without the express permission of the Co-trustees through the permitting process. Because of the above concerns, the following restrictions on the movement of personnel and materials throughout the Monument exist.

The Following Conditions and Rules apply to the all islands within the Monument with the exception of those at French Frigate Shoals and Midway Atoll:

Definitions:

"**New**" means off the shelf and never used anywhere but the island in question.

"**Clothing**" is all apparel , shoes, socks, over and under garments.

"**Soft gear**" is all gear such as daypacks, fannypacks, packing foam or similar material, camera bags, camera/binocular straps, microphone covers, nets, holding or weighing bags, bedding, tents, luggage, or any fabric, fiber, paper or material capable of harboring seeds or insects.

1. Any personnel who will be landing boats, and staying within the boats, at any island should have clean clothes and shoes.

2. Any personnel going ashore at any island and moving inshore from the immediate area in which waves are breaking, or beyond the intertidal area, at the time of landing must have new footwear, new or island specific clothes and new or island specific soft gear. All must be frozen for at least 48 hours prior to landing.

3. Any personnel entering any vegetated area, regardless of how sparse the vegetation, must have new footwear, new clothes and new soft gear all frozen for at least 48 hours prior to landing.

4. To avoid transport of seeds from within small boats the following protocol should be followed. For islands with safe or sandy landing conditions, one should keep quarantine shoes/socks inside quarantine containers until the island is reached. One should go ashore bare foot, and then don the quarantine shoes. Non quarantine shoes should be removed in the small boat, put into a bucket or some kind of sealed container, and left enclosed in that container until the person departs the island. The sealed container, if clean on the outside, may go ashore, but should not be opened ashore. For landings which are rocky, rough, and relatively unsafe (such as Necker and Nihoa) for safety reasons, quarantine shoes should be donned when inside the small boats, but care should be taken to look for seeds and insects which may be in the small boat.

5. Soft gear may not be moved between islands. Hard gear must be thoroughly cleaned and frozen for at least 48 hours between islands.

6. During transit, clothing and gear coming off Kure, Midway, or any islet of French Frigate Shoals must be carefully sequestered to avoid contamination of gear bound for cleaner islands. Special care must be taken to avoid contaminating gear storage areas and quarters aboard transporting vessels with seeds or insects from these islands.

7. Regardless of origin or destination, inspect and clean all equipment, supplies, etc., just prior to any trip to the Monument. Carefully clean all clothing, footwear and softgear following use to minimize risk of cross contamination of materials between islands.

8. Pack supplies in plastic buckets with fitted lids or other sealable metal or plastic containers since they can be thoroughly cleaned inside and out. Cardboard is not permitted on islands. Cardboard boxes disintegrate in a short time and harbor seeds, animals, etc., which cannot be easily found or removed. Wood is not permitted unless sealed (painted or varnished) on all surfaces and frozen for 48 hours.

   Wooden boxes can also harbor insects and seeds and therefore are only allowed if well constructed (tight fitting seams are required). All wood must be treated, and inside and outside surfaces must be painted or varnished to provide a smooth, cleanable finish that seals all holes.

9. Freeze or tarp and fumigate then seal all equipment (clothes, books, tents, everything) just prior to departure. Food and cooking items need not be fumigated but should be cleaned and frozen, if freezable. Cameras, binoculars, radios, and other electronic equipment must be thoroughly cleaned, including internal inspection whenever possible, but do not need to be frozen or fumigated. Such equipment can only be packed in wooden crates if treated as in #2 above. Any containers must contain new, clean packing materials and be frozen or fumigated.

10. At present, Tern Island is the singular exception to the above rule, having less stringent rules due to the large number of previously established alien species. Careful inspection of all materials and containers is still required. However, it is acceptable to use wooden and cardboard containers for transporting supplies to Tem Island. Also, there is no requirement for freezing or fumigating items disembarked at Tem. Although requirements for Tem Island are more lax, the Refuge is still concerned about the possibilities of new introductions. Do not wear clothing to Tern Island that has been worn at Pearl and Hermes, Midway Atoll or Kure Atoll.

Additional Special Conditions for Travel to Nihoa and Necker (Mokumanamana) Islands: Nihoa and Necker are the most pristine locations in the Monument. Nihoa is home to the highest number of federally listed endangered species in the Monument. Many areas of these small rugged islands are inaccessible. Introduction of any alien species could have disastrous results in a very short time. It would be almost impossible to mount any kind of control or eradication program on these islands should an alien species become established. Because of these reasons, access to Nihoa and Necker are strictly limited, and rules governing entry are more stringent.

Access to Nihoa and Necker by permittees will only be allowed under the accompaniment and supervision of a U.S. Fish and Wildlife Service (USFWS) Representative. The representative, who shall be appointed by the U.S. Fish and Wildlife Service Monument Manager will work with permittees to assure careful compliance

with all rules for inspection, handling and preparation of equipment. The USFWS Representative will have the authority to control and limit access to various parts of the island to protect animals, plants and archaeological sites, especially endangered species. The USFWS Representative will have the authority to disallow access to the island, or order an immediate departure from the island if conditions for working on the island are not met or are violated in some way.

All field equipment made out of fabric material or wood must be new, and never previously used in the Northwestern or main Hawaiian Islands. Equipment previously purchased or made for use on Nihoa and Necker that has been carefully sealed and stored while away from Nihoa and Necker, and not used elsewhere, may also be brought onto the island. Rules for freezing and/or fumigating are as described for other sites in the Monument (see above).

Clothing, footwear (shoes, slippers, socks, etc.), daypacks (soft gear) must be new, unused, or previously only used on Nihoa (or Necker) and carefully sealed and stored while off of the island. Hard gear such as camera, and equipment must be thoroughly cleaned and inspected.

Additional Special Conditions for Travel Within Pearl and Hermes Atoll: In recent years *Verbesina encelioides* has been introduced to Southeast Island within Pearl and Hermes Atoll. This noxious weed has taken over a large portion of the island. To prevent the further spread of this weed to the other islets within this atoll the following precaution must be taken:

1. Every person should have one set of quarantine gear and clothing for Southeast Island and one set of quarantine gear and clothing for all other islets in the atoll. For instance the same clothing, and if needed camping gear, may be used at north and seal kittery, but anything used at southeast needs to stay off all other islets in the atoll. Do not use the outer islet clothing and gear on Southeast Island.

2. Carefully inspect small boats and their associated equipment when traveling between islets at Pearl and Hermes Atoll. Since folks likely take one anchor ashore and put one anchor in the water there is potential for seed dispersal on anchor lines as well as from within the small boats. This needs to be watched very carefully.

Additional Special Conditions for Food: Fresh foods such as fruits, vegetables, leafy vegetables and tubers are not permitted on quarantine enforced islands (Necker, Nihoa, Laysan, Garner Pinnacles, Lisianski and Pearl and Hermes Reef). Concern is not only that certain species such as tomatoes could easily become established but that decomposing organic waste can also harbor microbes and insects and can act as an introduction vector. Soil can contain many seeds, eggs, larvae, etc., and cannot be transported to or between islands. All other food that can be safely frozen (this does not apply to food in cans or glass jars) must be packaged in air tight containers just as all other gear and frozen for 48 hours.

Appendix G
Part 3: Procedures for Minimizing Impacts to Endangered Laysan Finch

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The following avoidance and minimization measures will reduce the risk of harm to the Laysan finch:

- To reduce the risk of inadvertent drowning of Laysan finch at the campsite:
- Buckets will always be overturned so that they cannot collect rainwater.
- Laundry buckets must have lids while laundry is soaking.
- Water-filled buckets for dish washing (or for any other purpose) will always be attended.
- Tarps *(e.g.,* those covering propane, etc.) will be tucked in tightly so that they cannot collect rainwater.
- Garbage cans used for desalinization will have netting placed between the can and the lid. Care will be taken to make sure the lids close properly; faulty positioning of hoses can interfere with proper closure.
- To minimize accidental entanglement of Laysan finches at the campsite:
- Fabric with loose threads will be burned to minimize the risk of Laysan finch entanglement. Laysan finch feet can become entangled when fabric is hung out to dry.
- Loose threads will be cut off tents and tarps.
- Anything with small mesh *(e.g.,* bird nets) will be put away to avoid Laysan finch entanglement.
- minimize impacts to Laysan finch from general camp activities and maintenance:
- Camp supplies and water jugs will be aligned with ample space between rows so that finches will not get trapped. Storage jugs will always be capped.
- Burn barrels must be attended at all times when burning trash. When not burning, any vents or rust-eaten holes in the barrel or lid will be covered *(e.g.,* with rocks).
- For stability reasons, buckets will not be stacked more than two high. Personnel will watch for leaning buckets or water jugs and level the sand beneath leaning buckets if necessary.
- Tents will be zipped at all times (day and night) so that finches cannot enter.
- Laysan finches will not be fed or allowed access to human food. Laysan finch dependency on the camp could potentially result in adverse impacts to the finches when campsites are dismantled.
- On the islands of Pearl and Hermes, Laysan finches appear to be limited by nest sites, therefore, they nest in debris (driftwood, plastic pipes, baskets, etc.). Thus, the beaches will not be cleaned or debris disturbed as this may destroy a nest. In an effort to prevent nesting in undesirable locations, camp gear must be checked daily during the nesting season (spring and summer) for signs that finches are building nests on or under gear. If it is determined nest building has begun, the nest site should be modified to prevent nest completion.

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Appendix H
Disposition of Marine Mammal Parts/Biological Samples

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APPENDIX H – DISPOSITION OF MARINE MAMMAL PARTS/BIOLOGICAL SAMPLES

All marine mammal parts/biological samples taken/collected, received/possessed (including analysis and curation), or imported/exported under the authority of the permit must be maintained according to accepted curatorial standards. The terms and conditions of the permit remain in effect as long as biological samples authorized are maintained under the authority and responsibility of the Permit Holder.

Unless other disposition is specified in the permit application, the Permit Holder may retain marine mammal parts not consumed in analysis or otherwise disposed of during or after research or enhancement activities authorized by this permit if the marine mammal parts are maintained in a properly curated collection and made available for research or enhancement purposes at the request of the Office Director. The Permit Holder may use remaining samples for analyses not described in the permit application provided that the project descriptions are submitted to the Chief, Permits Division. NMFS encourages researchers to deposit any remaining specimens in the NMFS National Marine Mammal Tissue Bank (http://www.nmfs.noaa.gov/pr/health/tissue/).

Researchers may transfer marine mammal parts collected or imported under this permit for scientific research, curation, or educational purposes to recipients authorized by the appropriate Regional Office, or other authorized recipients consistent with 50 CFR 216.37.

Under no circumstances may marine mammal parts or cell lines developed from marine mammal parts collected, received, or imported/exported under the authority of this permit be bought or sold. Recipients of any marine mammal parts taken under the authority of this permit must adhere to the conditions of this permit and the regulations at 50 CFR 216.37. Researchers receiving or developing of cell lines must either be designated as a Co-investigator (CI) on this permit or be a holder of or a CI on a permit that authorizes research on marine mammal cell lines.

The Permit Holder must maintain a record of all marine mammal parts/biological samples obtained under this permit. This record must include the number and type of parts; a description of each animal from which parts were taken including, species, age, size, sex, reproductive condition; date and location of acquisition; circumstances causing death or nature of sample collection; unique identifying number; legal authority for original sample/part collection, and disposition of parts.

The Permit Holder may not import specimens into the U.S. from marine mammals taken in any high seas driftnet fishery after December 31, 1992; deliberately killed or harassed for the purposes of fulfilling a permit; or taken illegally in the country of origin.

Imported marine mammal parts must be taken in a humane manner and in compliance with the MMPA, ESA, and any applicable foreign laws. Importation of marine mammal parts is subject to the provisions of 50 CFR parts 14, 23 [CITES], 216, and 222.

Any specimens of species listed in the Appendices to CITES must be accompanied by valid CITES documentation from the exporting country, and, in the case of Appendix I species, and Appendix I and II species collected in the open ocean (i.e., in the marine environment outside of any country's territorial jurisdiction), from the CITES Management Authority of the importing country.

All specimens imported into the U.S. must be cleared through a U.S. Fish and Wildlife Service (USFWS) port designated for wildlife and must be accompanied by documentation giving a description of each animal from which specimen materials were taken including, species identification, age, size, sex, reproductive condition; date and location of acquisition; circumstances causing death or nature of specimen collection; and legal authority for original specimen collection.

Designated Ports of Entry: Honolulu is the designated for the importation or exportation of wildlife from/to Hawaii and is referred to as a "designated port" (50 CFR 14.12). Please notify the USFWS wildlife inspectors at this port at least 48 hours prior to import or export (3375 Koapaka St. #B296, Honolulu, Hawaii 96819-1867; 808-861-8525 phone; 808-861-8515 fax). To use a port of entry other than a designated port, the Permit Holder or PI must obtain a Designated Port Exception Permit from the USFWS as required in 50 CFR 14.31 and 14.32. A Wildlife Declaration Form 3-177 must be filed with the USFWS inspector at the time of importation/exportation.

Federal regulations (50 CFR 216.37 Marine mammal parts) governing the transfer of marine mammal parts taken or imported under permit is included in all research and enhancement permits that authorize sample collection. 50 CFR 216.37 specifies the following:

With respect to marine mammal parts acquired by take or import authorized under a permit issued under this subpart: (a) Marine mammal parts are transferrable if: (1) The person transferring the part receives no remuneration of any kind for the marine mammal part; (2) The person receiving the marine mammal part is: (i) An employee of NMFS, the U.S. Fish and Wildlife Service, or any other governmental agency with conservation and management responsibilities, who receives the part in the course of their official duties; (ii) A holder of a special exception permit which authorizes the take, import, or other

activity involving the possession of a marine mammal part of the same species as the subject part; or (iii) In the case of marine mammal parts from a species that is not depleted, endangered or threatened, a person who is authorized under section 112(c) of the MMPA and subpart C of this part to take or import marine mammals or marine mammal parts; (iv) Any other person specifically authorized by the Regional Director, consistent with the requirements of paragraphs (a)(1) and (a)(3) through (6) of this section. (3) The marine mammal part is transferred for the purpose of scientific research, maintenance in a properly curated, professionally accredited scientific collection, or education, provided that, for transfers for educational purposes, the recipient is a museum, educational institution or equivalent that will ensure that the part is available to the public as part of an educational program; (4) A unique number assigned by the permit holder is marked on or affixed to the marine mammal part or container; (5) The person receiving the marine mammal part agrees that, as a condition of receipt, subsequent transfers may only occur subject to the provisions of paragraph (a) of this section; and (6) Within 30 days after the transfer, the person transferring the marine mammal part notifies the Regional Director of the transfer, including a description of the part, the person to whom the part was transferred, the purpose of the transfer, certification that the recipient has agreed to comply with the requirements of paragraph (a) of this section for subsequent transfers, and, if applicable, the recipient's permit number.

(b) Marine mammal parts may be loaned to another person for a purpose described in paragraph (a)(3) of this section and without the agreement and notification required under paragraphs (a)(5) and (6) of this section, if: (1) A record of the loan is maintained; and (2) The loan is for not more than one year. Loans for a period greater than 12 months, including loan extensions or renewals, require notification of the Regional Director under paragraph (a)(6).

(c) Unless other disposition is specified in the permit, a holder of a special exception permit may retain marine mammal parts not destroyed or otherwise disposed of during or after a scientific research or enhancement activity, if such marine mammal parts are: (1) Maintained as part of a properly curated, professionally accredited collection; or (2) Made available for purposes of scientific research or enhancement at the request of the Office Director.

(d) Marine mammal parts may be exported and subsequently reimported by a permit holder or subsequent authorized recipient, for the purpose of scientific research, maintenance in a properly curated, professionally accredited scientific collection, or education, provided that: (1) The permit holder or other person receives no remuneration for the marine mammal part; (2) A unique number assigned by the permit holder is marked on or affixed to the marine mammal specimen or container; (3) The marine mammal part is exported or reimported in compliance with all applicable domestic and foreign laws; (4) If exported or reimported for educational purposes, the recipient is a museum, educational institution, or equivalent that will ensure that the part is available to the public as

part of an educational program; and (5) Special reports are submitted within 30 days after both export and reimport as required by the Office Director under 216.38.

Appendix I
Hawaiian Monk Seal Research and Enhancement Proposed Levels of Take for PEIS Alternatives 1, 3, and 4

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Appendix I: Table Specifying the Activities Proposed under the Status Quo Alternative.

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
1. Monitoring	Any	Both	150	3	Disturbance from visual observation and photo-identification during ground monitoring and aerial and vessel surveys	MHI	Annually at any time of year.
			50	1		Nihoa Is.	
			50	1		Necker Is.	
			250	5		French Frigate Shoals	
			10	1		Gardner Pinnacles	
			250	3		Laysan Is.	
			225	3		Lisianski Is.	
			200	3		Pearl and Hermes Reef	
			100	2		Midway Atoll	
			150	2		Kure Atoll	
			5	1		Johnston Atoll	

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
2a. Tagging	Any except nursing pups, lactating or obviously pregnant females.	Both	30	3	Restraint, tagging (flipper and PIT), collect flipper plugs, morphometrics (length and girth)	MHI	Annually at any time of year (predominantly during summer field camps). All of the animals may also be taken by Tasks 1 and 3. Weaned pups in the MHI may also have ultrasound performed concurrent with flipper tagging At French Frigate Shoals, 35 weaned pups of either sex may have a sonic tag deployed on a third flipper tag (annually over three years).
			25	1		Nihoa Is.	
			15	1		Necker Is.	
			150	3		French Frigate Shoals	
			75	3		Laysan Is.	
			50	3		Lisianski Is.	
			50	3		Pearl and Hermes Reef	
			25	2		Midway Atoll	
			35	2		Kure Atoll	
			1	1		Johnston Atoll	
2b. Retagging	Any except nursing pups, lactating or obviously pregnant females.	Both	100	1	Restraint, retagging (flipper), flipper plugs, morphometrics	Hawaiian Archipelago	Annually at any time of year. Seals may have been taken by disturbance (Task 1) and may have been tagged in previous years.

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
3. Marking	Any	Both	75	2	Temporary bleach marking	MHI	Annually at any time of year. All of the animals may also be taken by disturbance (Task 1) and tagging (Task 2).
			30	2		Nihoa Is.	
			30	2		Necker Is.	
			250	2		French Frigate Shoals	
			250	2		Laysan Is.	
			225	2		Lisianski Is.	
			200	2		Pearl and Hermes Reef	
			100	2		Midway Atoll	
			150	2		Kure Atoll	
			5	1		Johnston Atoll	
total			**1,871**				
4. Health Screening and Foraging Studies	Any healthy seal excluding lactating females with pups and	Both	70	2	Restraint, sedation, tagging, blood sampling, swabs, blubber biopsy, weight, morphometrics, ultrasound, instrumentation	Hawaiian Archipelago	Annually any time of year. Sixty (60) healthy seals may be instrumented. Recaptures for instrument removal and sampling. All animals may have been

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
	nursing pups						taken by Tasks 1-3.
	Any unhealthy seal excluding lactating females with pups and nursing pups	Both	30	2	Restraint, sedation, tagging, blood sampling, swabs, blubber biopsy, morphometrics, ultrasound, treatment (lance abscesses), humane euthanasia or incidental mortality of 10 moribund animals	Hawaiian Archipelago	Annually at any time of year. Includes humane euthanasia of up to 10 moribund or severely injured seals at discretion of veterinarian authorized over a five-year period. All animals may have been taken by Tasks 1-3.
5. Intestinal Parasite Treatment (De-worming)	Pups $\geq$ 120 days post-weaning and juveniles up to age 3	Both	200	8	Restraint, weight, morphometrics, fecal collection (voided feces or fecal sample collected via fecal loop or digital extraction), treatment (IM or oral praziquantel and SC ivermectin, oral Fenbendazole), ultrasound; post-treatment monitoring at approximately 4 week intervals (visual assessments and recapture for weight, morphometrics, and fecal	Hawaiian Archipelago	Annually, year-round. Initial study trials to include pups $\geq$ 120 days post weaning to juveniles $\leq$ 2 years. Estimated maximum number of seals that may be included in initial study are: French Frigate Shoals: 47 seals; Laysan Island: 41 seals; and Lisianski Island: 29 seals. Treatments may be combined with other activities requiring restraint and sedation

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
					sampling)		
total							
6. Translocation	Nursing pup	Both	20	6	Capture, restraint, and relocation by hand to natural mother or prospective foster mother	Hawaiian Archipelago, Johnston Atoll	Establishing/re-establishing maternal association. Annually at any time of year but predominantly during summer field camps. Most takes will occur in the NWHI (intra-island/atoll).
	Weaned Pup	Both	35	3	Capture, restraint, sampling, and relocation from high risk areas via boat, ship, vehicle, or air craft	Hawaiian Archipelago, Johnston Atoll	Risk alleviation. Annually at any time of year. Most takes occur at French Frigate Shoals (intra-atoll) or within the Main Hawaiian Islands.
	Weaned Pup	Both	20	3	Capture, restraint, sedation, sampling, instrumentation, temporary holding, translocation from areas of low survival via boat	NWHI	Seals may be translocated between atolls within the NWHI, requiring authorization on a case-by-case basis.

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
					and ship		
total			**75**				
7. Adult Male Removal	Adult	Male	10	2	Capture, restraint, sedation, sampling, instrumentation/trans-location, permanent captivity, or euthanasia	Hawaiian Archipelago; Johnston Atoll	Up to 10 males may be removed over a five year period.
8. Disentangle	Any	Both	As warranted (likely not to exceed 25/year)	>1	Disentanglement and dehooking (with or without capture, sedation, and release)	Hawaiian Archipelago; Johnston Atoll	Annually at any time of year. All animals may have been taken by Tasks 1-3.
9. Conduct Necropsies	Any	Both	As warranted	1	Necropsy any seal found dead, that died during restraint, or that was euthanized.	Hawaiian Archipelago; Johnston Atoll	Annually at any time of year.
10. Opportunistic Retrieval of samples	Any	Both	Unlimited samples	Unlimited samples	Collect parts (placentae, scats, spews, and molted fur/skin) from haul out areas	Hawaiian Archipelago; Johnston Atoll	Annually at any time of year but predominantly during summer field camps.
11. Import and Export Parts	Any	Both	Unlimited import/ export	Unlimited samples	Export (and re-import) Hawaiian monk seal samples collected under the authority of this	World-wide (including but not limited to Canada, the Netherlands,	Annually at any time of year.

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
					permit. Import (and re-export) Mediterranean monk seal specimens for research related to monk seal conservation	Scotland, Greece, Australia)	
12. Incidental harassment of monk seals	Any	Both	200	2	Incidental harassment during any research and enhancement activity	Hawaiian Archipelago; Johnston Atoll	Total incidental harassment over all activities.
13. Accidental Mortality (Research)	Any	Both	2	1	During any research or enhancement activity	Hawaiian Archipelago; Johnston Atoll	Four accidental mortalities over a five-year period is authorized not to exceed 2 deaths in any one year.

Appendix I: Table Specifying the Activities Proposed under Alternative 3 – Limited Translocation.

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
1. Monitoring	Any	Both	250	5	Disturbance from visual observation and photo-identification during ground monitoring and aerial and vessel surveys and video camera or remote aerial survey vehicle	MHI	Annually at any time of year.
			100	3		Nihoa Is.	
			75	3		Necker Is.	
			250	5		French Frigate Shoals	
			10	1		Gardner Pinnacles	
			400	5		Laysan Is.	
			275	5		Lisianski Is.	
			400	5		Pearl and Hermes Reef	
			150	5		Midway Atoll	
			200	5		Kure Atoll	
			5	1		Johnston Atoll	
2a. Tagging	Any except	Both	60	3	Restraint, tagging (flipper	MHI	Annually at any time of year

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
	nursing pups, lactating or obviously pregnant females.		25	3	and PIT), collect flipper plugs, morphometrics (length and girth)	Nihoa Is.	(predominantly during summer field camps). All of the animals may also be taken by Tasks 1 and 3. Weaned pups in the MHI may also have ultrasound performed concurrent with flipper tagging At French Frigate Shoals, 35 weaned pups of either sex may have a sonic tag deployed on a third flipper tag (annually over three years).
			15	3		Necker Is.	
			100	3		French Frigate Shoals	
			75	3		Laysan Is.	
			70	3		Lisianski Is.	
			70	3		Pearl and Hermes Reef	
			50	3		Midway Atoll	
			50	3		Kure Atoll	
			5	3		Johnston Atoll	
2b. Retagging	Any except nursing pups, lactating or obviously pregnant females.	Both	100	1	Restraint, retagging (flipper), flipper plugs, morphometrics	Hawaiian Archipelago	Annually at any time of year. Seals may have been taken by disturbance (Task 1) and may have been tagged in previous years.
3. Marking	Any	Both	150	2	Temporary bleach	MHI	Annually at any time of

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
			60	2	marking	Nihoa Is.	year. All of the animals may also be taken by disturbance (Task 1) and tagging (Task 2).
			30	2		Necker Is.	
			250	2		French Frigate Shoals	
			250	2		Laysan Is.	
			250	2		Lisianski Is.	
			250	2		Pearl and Hermes Reef	
			100	2		Midway Atoll	
			150	2		Kure Atoll	
			5	1		Johnston Atoll	
4. Health Screening and Foraging Studies	Any healthy seal excluding lactating females with pups and nursing pups	Both	100	2	Restraint, sedation, tagging, blood sampling, swabs, blubber biopsy, weight, morphometrics, ultrasound, instrumentation	Hawaiian Archipelago and Johnston Atoll	Annually any time of year. Sixty (60) healthy seals may be instrumented. Recaptures for instrument removal and sampling. All animals may have been taken by Tasks 1-3.

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
	Any unhealthy seal excluding lactating females with pups and nursing pups	Both	30	2	Restraint, sedation, tagging, blood sampling, swabs, blubber biopsy, morphometrics, ultrasound, treatment (lance abscesses, administer long-acting antibiotic), humane euthanasia or incidental mortality of 10 moribund animals	Hawaiian Archipelago and Johnston Atoll	Annually at any time of year. Includes humane euthanasia of up to 10 moribund or severely injured seals at discretion of veterinarian authorized over a five-year period. All animals may have been taken by Tasks 1-3.
5. Intestinal Parasite Treatment (De-worming)	Pups $\geq$ 120 days post-weaning and juveniles up to age 3	Both	300	8	Restraint, weight, morphometrics, fecal collection (voided feces or fecal sample collected via fecal loop or digital extraction), deworming treatment, ultrasound; post-treatment monitoring at regular intervals (visual assessments and recapture for weight, morphometrics, and fecal sampling)	Hawaiian Archipelago and Johnston Atoll	Annually, year-round. Treatments may be combined with other activities requiring restraint and sedation

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
6. Translocation	Nursing pup	Both	20	6	Capture, restraint, and relocation by hand to natural mother or prospective foster mother	Hawaiian Archipelago, Johnston Atoll	Establishing/re-establishing maternal association. Annually at any time of year but predominantly during summer field camps. Most takes will occur in the NWHI (intra-island/atoll).
	Weaned Pup	Both	60	3	Capture, restraint, sampling, and relocation from high risk areas via boat, ship, vehicle, or air craft	Hawaiian Archipelago, Johnston Atoll	Risk alleviation. Annually at any time of year. No movements from NWHI to MHI but any other combination allowed.
	Weaned Pup	Both	20	3	Capture, restraint, sedation, sampling, instrumentation, temporary holding, translocation from areas of low survival via boat, ship, vehicle, or air craft	Hawaiian Archipelago, Johnston Atoll	Enhance survival: 1st stage of two-stage translocation. Annually at any time of year. Mostly females, but males when warranted. No movements from NWHI to MHI but any other combination allowed. Details to be determined

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
							through application of decision framework.
	Juvenile and Sub-adult	Both	30	3	Capture, restraint, sedation, sampling, instrumentation, temporary holding, translocation via boat, ship, vehicle, or air craft	Hawaiian Archipelago, Johnston Atoll	Enhance survival: 2nd stage of two-stage translocation. Annually at any time of year. Mostly females, but males when warranted. No movements from NWHI to MHI but any other combination allowed. Details to be determined through application of decision framework. Surviving juveniles which had been translocated as weaned pups returned to their natal or other suitable region (may include seals from 1st stage of translocation that remained at recipient site more than 3 yr and need to be returned).

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
	Juvenile	Both	6	3	Capture, restraint, sedation, sampling, instrumentation, temporary holding, translocate between subpopulations	Hawaiian Archipelago, Johnston Atoll	Research to determine survival of translocated juveniles to inform two-stage translocation enhancement. Annually at any time of year. No movements from NWHI to MHI but any other combination allowed.
7. Adult Male Removal	Adult	Male	20	2	Capture, restraint, sedation, sampling, instrumentation/trans-location, permanent captivity, or euthanasia	Hawaiian Archipelago; Johnston Atoll	Up to 20 males may be removed annually, but only 10 lethal removals over a five year period.
8. Disentangle	Any	Both	As warranted (likely not to exceed 25/year)	>1	Disentanglement and dehooking (with or without capture, sedation, and release)	Hawaiian Archipelago; Johnston Atoll	Annually at any time of year. All animals may have been taken by Tasks 1-3.
9. Conduct Necropsies	Any	Both	As warranted	1	Necropsy any seal found dead, that died during restraint, or that was euthanized.	Hawaiian Archipelago; Johnston Atoll	Annually at any time of year.
10.	Any	Both	Unlimited	Unlimited	Collect parts (placentae,	Hawaiian	Annually at any time of year

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
Opportunistic Retrieval of samples			samples	samples	scats, spews, and molted fur/skin) from haul out areas	Archipelago; Johnston Atoll	but predominantly during summer field camps.
11. Import and Export Parts	Any	Both	Unlimited import/ export	Unlimited samples	Export (and re-import) Hawaiian monk seal samples collected under the authority of this permit. Import (and re-export) Mediterranean monk seal specimens for research related to monk seal conservation	World-wide (including but not limited to Canada, the Netherlands, Scotland, Greece, Australia)	Annually at any time of year.
12. Supplemental Feeding	Pup or Juvenile	Both	12	Unlimited	Supplemental feeding of post-rehabilitated seals	NWHI	Annually at any time of year seals may be fed at daily or longer intervals for up to one year.
13. Behavioral modification	Any	Both	10	20	Intentional harassment for behavior modification. Aversive conditioning and other methods. Capture restraint, sedation, biomedical sampling, instrumentation, translocation, temporary holding. Hazing using visual, audible and tactile means. Impeding movement with barriers.	MHI	Annually at any time of year. Alter behavior of seals socialized to humans or behaving in a manner dangerous to the seal or public safety. Experimental protocols to determine optimal methods.

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
14. Chemical Behavioral Modification of Adult Males	Adult	Male	20	3	Capture, restraint, sedation, biomedical sampling, instrumentation, and administration of testosterone reduction agent	Hawaiian Archipelago	Annual
15. Vaccinations	Any	Both	1100	4	Capture, restraint, sedation, biomedical sampling and administration of vaccine.	Hawaiian Archipelago	
16. Incidental harassment of monk seals	Any	Both	400	3	Incidental harassment during any research and enhancement activity	Hawaiian Archipelago; Johnston Atoll	Total incidental harassment over all activities.
17. Accidental Mortality (Research)	Any	Both	2	1	During any research activity	Hawaiian Archipelago; Johnston Atoll	Four accidental mortalities over a five-year period are authorized not to exceed 2 deaths in any one year.
17. Accidental Mortality (Enhancement)	Weaner	Both	2	1	During any enhancement activity	Hawaiian Archipelago; Johnston Atoll	Four accidental mortalities over a five-year period are authorized not to exceed 2 deaths in any one year.
	Juvenile	Both	4	1	During any enhancement activity	Hawaiian Archipelago;	Eight accidental mortalities over a five-year period are

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
						Johnston Atoll	authorized not to exceed 4 deaths in any one year.
	Adult	Male	2	1	During any enhancement activity	Hawaiian Archipelago; Johnston Atoll	Four accidental mortalities over a five-year period are authorized not to exceed 2 deaths in any one year.

Appendix I: Table Specifying the Activities Proposed under Alternative 4 – Enhanced Implementation.

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
1. Monitoring	Any	Both	250	5	Disturbance from visual observation and photo-identification during ground monitoring and aerial and vessel surveys and video camera or remote aerial survey	MHI	Annually at any time of year.
			100	3		Nihoa Is.	
			75	3		Necker Is.	
			250	5		French Frigate Shoals	

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
			10	1	vehicle	Gardner Pinnacles	
			400	5		Laysan Is.	
			275	5		Lisianski Is.	
			400	5		Pearl and Hermes Reef	
			150	5		Midway Atoll	
			200	5		Kure Atoll	
			5	1		Johnston Atoll	
2a. Tagging	Any except nursing pups, lactating or obviously pregnant females.	Both	60	3	Restraint, tagging (flipper and PIT), collect flipper plugs, morphometrics (length and girth)	MHI	Annually at any time of year (predominantly during summer field camps). All of the animals may also be taken by Tasks 1 and 3. Weaned pups in the MHI may also have ultrasound performed concurrent with
			25	3		Nihoa Is.	
			15	3		Necker Is.	
			100	3		French Frigate Shoals	
			75	3		Laysan Is.	

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
							flipper tagging
			70	3		Lisianski Is.	At French Frigate Shoals, 35 weaned pups of either sex may have a sonic tag deployed on a third flipper tag (annually over three years).
			70	3		Pearl and Hermes Reef	
			50	3		Midway Atoll	
			50	3		Kure Atoll	
			5	3		Johnston Atoll	
2b. Retagging	Any except nursing pups, lactating or obviously pregnant females.	Both	100	1	Restraint, retagging (flipper), flipper plugs, morphometrics	Hawaiian Archipelago	Annually at any time of year. Seals may have been taken by disturbance (Task 1) and may have been tagged in previous years.
3. Marking	Any	Both	150	2	Temporary bleach marking	MHI	Annually at any time of year. All of the animals may also be taken by disturbance (Task 1) and tagging (Task 2).
			60	2		Nihoa Is.	
			30	2		Necker Is.	
			250	2		French Frigate Shoals	

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
			250	2		Laysan Is.	
			250	2		Lisianski Is.	
			250	2		Pearl and Hermes Reef	
			100	2		Midway Atoll	
			150	2		Kure Atoll	
			5	1		Johnston Atoll	
4. Health Screening and Foraging Studies	Any healthy seal excluding lactating females with pups and nursing pups	Both	100	2	Restraint, sedation, tagging, blood sampling, swabs, blubber biopsy, weight, morphometrics, ultrasound, instrumentation	Hawaiian Archipelago and Johnston Atoll	Annually any time of year. Sixty (60) healthy seals may be instrumented. Recaptures for instrument removal and sampling. All animals may have been taken by Tasks 1-3.

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
	Any unhealthy seal excluding lactating females with pups and nursing pups	Both	30	2	Restraint, sedation, tagging, blood sampling, swabs, blubber biopsy, morphometrics, ultrasound, treatment (lance abscesses, administer long-acting antibiotic), humane euthanasia or incidental mortality of 10 moribund animals	Hawaiian Archipelago and Johnston Atoll	Annually at any time of year. Includes humane euthanasia of up to 10 moribund or severely injured seals at discretion of veterinarian authorized over a five-year period. All animals may have been taken by Tasks 1-3.
5. Intestinal Parasite Treatment (De-worming)	Pups $\geq$ 120 days post-weaning and juveniles up to age 3	Both	300	8	Restraint, weight, morphometrics, fecal collection (voided feces or fecal sample collected via fecal loop or digital extraction), deworming treatment, ultrasound; post-treatment monitoring at regular intervals (visual assessments and recapture for weight, morphometrics, and fecal sampling)	Hawaiian Archipelago and Johnston Atoll	Annually, year-round. Treatments may be combined with other activities requiring restraint and sedation

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
6. Translocation	Nursing pup	Both	20	6	Capture, restraint, and relocation by hand to natural mother or prospective foster mother	Hawaiian Archipelago, Johnston Atoll	Establishing/re-establishing maternal association. Annually at any time of year but predominantly during summer field camps. Most takes will occur in the NWHI (intra-island/atoll).
	Weaned Pup	Both	60	3	Capture, restraint, sampling, and relocation from high risk areas via boat, ship, vehicle, or air craft	Hawaiian Archipelago, Johnston Atoll	Risk alleviation. Annually at any time of year. Translocations within or between any subpopulations in the species range allowed.
	Weaned Pup	Both	20	3	Capture, restraint, sedation, sampling, instrumentation, temporary holding, translocation from areas of low survival via boat, ship, vehicle, or aircraft	Hawaiian Archipelago, Johnston Atoll	Enhance survival: 1st stage of two-stage translocation. Annually at any time of year. Mostly females, but males when warranted. Translocations within or between any subpopulations in the

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
							species range allowed. Details to be determined through application of decision framework.
	Juvenile and Sub-adult	Both	30	3	Capture, restraint, sedation, sampling, instrumentation, temporary holding, translocation via boat, ship, vehicle, or air craft	Hawaiian Archipelago, Johnston Atoll	Enhance survival: 2nd stage of two-stage translocation. Annually at any time of year. Mostly females, but males when warranted. Translocations within or between any subpopulations in the species range allowed. Details to be determined through application of decision framework. Surviving juveniles which had been translocated as weaned pups returned to their natal or other suitable site (may include seals from 1st stage of translocation that remained at recipient site more than 3 yr and need to be returned).

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
	Juvenile	Both	6	3	Capture, restraint, sedation, sampling, instrumentation, temporary holding, translocate between subpopulations	Hawaiian Archipelago, Johnston Atoll	Research to determine survival of translocated juveniles to inform two-stage translocation enhancement. Annually at any time of year. Translocations within or between any subpopulations in the species range allowed.
7. Adult Male Removal	Adult	Male	20	2	Capture, restraint, sedation, sampling, instrumentation/trans-location, permanent captivity, or euthanasia	Hawaiian Archipelago; Johnston Atoll	Up to 20 males may be removed annually, but only 10 lethal removals over a five year period.
8. Disentangle	Any	Both	As warranted (likely not to exceed 25/year)	>1	Disentanglement and dehooking (with or without capture, sedation, and release)	Hawaiian Archipelago; Johnston Atoll	Annually at any time of year. All animals may have been taken by Tasks 1-3.
9. Conduct Necropsies	Any	Both	As warranted	1	Necropsy any seal found dead, that died during restraint, or that was euthanized.	Hawaiian Archipelago; Johnston Atoll	Annually at any time of year.

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
10. Opportunistic Retrieval of samples	Any	Both	Unlimited samples	Unlimited samples	Collect parts (placentae, scats, spews, and molted fur/skin) from haul out areas	Hawaiian Archipelago; Johnston Atoll	Annually at any time of year but predominantly during summer field camps.
11. Import and Export Parts	Any	Both	Unlimited import/ export	Unlimited samples	Export (and re-import) Hawaiian monk seal samples collected under the authority of this permit. Import (and re-export) Mediterranean monk seal specimens for research related to monk seal conservation	World-wide (including but not limited to Canada, the Netherlands, Scotland, Greece, Australia)	Annually at any time of year.
12. Supplemental Feeding	Pup or Juvenile	Both	12	Unlimited	Supplemental feeding of post-rehabilitated seals	NWHI	Annually at any time of year seals may be fed at daily or longer intervals for up to one year.
13. Behavioral modification	Any	Both	10	20	Intentional harassment for behavior modification. Aversive conditioning and other methods. Capture restraint, sedation, biomedical sampling, instrumentation, translocation, temporary holding. Hazing using visual, audible and tactile means. Impeding	MHI	Annually at any time of year. Alter behavior of seals socialized to humans or behaving in a manner dangerous to the seal or public safety. Experimental protocols to determine optimal methods.

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
					movement with barriers.		
14. Chemical Behavioral Modification of Adult Males	Adult	Male	20	3	Capture, restraint, sedation, biomedical sampling, instrumentation, and administration of testosterone reduction agent	Hawaiian Archipelago	Annual
15. Vaccinations	Any	Both	1100	4	Capture, restraint, sedation, biomedical sampling and administration of vaccine.	Hawaiian Archipelago	
16. Incidental harassment of monk seals	Any	Both	400	3	Incidental harassment during any research and enhancement activity	Hawaiian Archipelago; Johnston Atoll	Total incidental harassment over all activities.
17. Accidental Mortality (Research)	Any	Both	2	1	During any research activity	Hawaiian Archipelago; Johnston Atoll	Four accidental mortalities over a five-year period are authorized not to exceed 2 deaths in any one year.
17. Accidental Mortality (Enhancement)	Weaner	Both	2	1	During any enhancement activity	Hawaiian Archipelago; Johnston Atoll	Four accidental mortalities over a five-year period are authorized not to exceed 2 deaths in any one year.
	Juvenile	Both	4	1	During any enhancement	Hawaiian	Eight accidental mortalities

Table 1. Proposed annual takes of Hawaiian monk seals. Locations: Hawaiian Archipelago=Main Hawaiian Islands (MHI) and adjacent islets, Northwestern Hawaiian Islands (NWHI), and Johnston Atoll. MHI=Hawaii, Maui, Molokai, Kahoolawe, Lanai, Oahu, Kauai, and Niihau. Also all smaller islands and offshore islets, including, but not limited to, Kaula Rock, Lehua, Molokini, etc. NWHI=Nihoa Island (Is.), Necker Is., French Frigate Shoals, Laysan Is., Lisianski Is., Pearl and Hermes Reef, Midway Atoll, Kure Atoll, Gardner Pinnacles. Activities would occur under Permit No. 10137 through June 2014, and the same activities are proposed to be permitted beyond 2014.

Task	Size (Age)	Sex	No. Seals Taken/ Year	No. Takes/ Seal/Year	Type of Takes	Locations	Dates/Time Period And Details
					activity	Archipelago; Johnston Atoll	over a five-year period are authorized not to exceed 4 deaths in any one year.
	Adult	Male	2	1	During any enhancement activity	Hawaiian Archipelago; Johnston Atoll	Four accidental mortalities over a five-year period are authorized not to exceed 2 deaths in any one year.

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Appendix J
Hawaiian Monk Seal Stochastic Model

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The monk seal stochastic simulation model is one of the primary tools used by the PIFSC of the NFMS to perform quantitative analyses for research and management of the species. Historically, the model has been used for a variety of applications. The most common applications are: to make predictions about the future status of the population based on current demography, to evaluate the significance of specific mortality sources (such as shark predation or male aggression), and to evaluate the sensitivity and likely benefits derived from candidate interventions. Details of the model structure and mechanics are provided in Harting (2002), with the fundamental features summarized below.

At its core, the model is a mechanistic, stochastic, metapopulation model with provisions for handling uncertainties in input parameters and modeled processes. The model is heavily data driven, capitalizing on the demographic and life history data collected over more than two decades in the NWHI and, more recently, the incipient demographic data set for the MHI. Necker and Nihoa Islands (NWHI) are relatively data poor and have historically comprised a small portion of total abundance, and are therefore not included in simulations. The demographic data (reproductive, survival, and migration rates) used by the model are derived primarily from resightings of known-aged (or "cohort") seals first tagged as pups.

Demographic data are evaluated separately for each of the 7 breeding sites handled by the model. For the NWHI sites, Jolly-Seber survival estimates (Jolly 1965; Seber 1965) are calculated using the cohort resighting data as input, with separate estimates for two time periods: all years pooled, and most recent three years pooled. The latter estimates were used for all projections described in this PEIS. Siler's five-parameter competing risk model (Siler 1979, 1983) is then fit to the observed (Jolly-Seber) rates. For the model, parameter uncertainty is handled by random sampling Siler parameters from the variance/covariance matrix from the parameter fitting.

Age-specific reproductive rates are estimated from pooling pupping data from 1990 to the present using methods described in Harting *et al*. (2007). As with survival rates, parameter uncertainty is handled by randomly sampling a unique set of correlated parameters from the fitted distributions. In the model, survival and reproduction are determined stochastically for each individual in the population by binomial sampling (testing a uniform random number in the range [0,1] against the age-specific survival rate). Migration is also determined stochastically for each individual according to the fitted movement rate for each age class.

As compared to the NWHI, data from which to estimate vital rates and population composition are much more limited for the MHI. A detailed description of the methods used to fit both survival and reproductive rates for

the MHI are provided in Baker *et al.* (in press). Where data are lacking (*e.g.*, reproductive rates of older MHI females), some inference and extrapolation is necessary based on patterns observed in the NWHI. Uncertainty in parameter estimates is handled in the same manner as for the NWHI, with unique parameters drawn from their fitted distributions at the start of each simulation.

Each simulation is initialized with the most recent starting age/sex distribution for each site, as compiled from the most recent year's observations. Ages are ascribed different degrees of confidence depending on the age at which a seal was first identified. At the start of each simulation, the model randomly assigns all minimum-aged seals (those first identified as adults) a working age for initializing that simulation. The random age assignment is consistent with the estimated survival schedule for each site. Interatoll movement rates are also calculated from the annual resighting data, with different rates for each pups, juveniles, subadults, and adults..

The primary sequence of events during each simulation year are survival and reproduction, specific natural perturbations, migration between subpopulations, and management actions. The model provides multiple options for simulating natural perturbations (survival catastrophes, birth catastrophes, shark predation, and aggressive male interactions) and management interventions (captive rearing/release, translocations, shark removals, and other). The only perturbations and management actions to be included in the projections described in this PEIS were removal of aggressive males, removal (death) of females, and translocation. For the translocations, the model transfers the desired number of seals from the donor site to the recipient site, and tracks their annual survival until they are transferred back to the donor site. Survival rate decrements are applied to these seals as specified in the modeled scenario.

The model produces a diverse array of outputs suitable for evaluating simulation outcomes including abundance, realized growth rate, multiple demographic descriptors, and assorted metrics specific to whatever intervention scenario was executed. The primary output is site-specific, with summary diagnostics for the entire system and the two main regions (NWHI and MHI).

For the purposes of this analysis, certain other model components were disabled, including the option for density dependent adjustment of demographic rates. While that feature of the model is certainly important when performing long-term projections, the precise manner in which density dependence operates on the monk seal population is unknown and its influence can overwhelm and obscure the effects of all other factors included in the simulation scenario.

Appendix K
Historical and Contemporary Significance of the Endangered Hawaiian Monk Seal in Native Hawaiian Culture

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Historical and Contemporary Significance of the Endangered Hawaiian Monk Seal in Native Hawaiian Culture

Monk seals hauled out on the beach at Nu‘alolo Kai, Nā Pali, Kaua‘i (photo: J. Kittinger)

Prepared for:

Protected Species Division (PSD), Pacific Islands Regional Office (PIRO) of the National Oceanic and Atmospheric Administration’s (NOAA) National Marine Fisheries Service

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About this Report

The following report is based on research activities supported by a grant from the Pacific Islands Regional Office (PIRO) of the National Oceanic and Atmospheric Administration's (NOAA) National Marine Fisheries Service (Solicitation #: PIRO-10-0558). The research findings presented herein may be used to support the Protected Species Division's longstanding goals to protect and recover endangered and threatened species of sea turtles, monk seals, and cetaceans in the Pacific Islands region as mandated by the Endangered Species Act (ESA) and Marine Mammal Protection Act (MMPA).

This proposal was prepared by the Pacific Islands Office of Impact Assessment, Inc. (IAI). IAI has specialized in socioeconomic and sociocultural dimensions of marine fisheries and related coastal zone management issues since 1980, with a specific focus on assessment and monitoring of social and economic changes associated with management of public trust resources.

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Abstract

The Hawaiian monk seal is highly endangered but relatively little is known about the socio-cultural significance of the species in Native Hawaiian communities. Accurate assessment of historical and modern socio-cultural values and perspectives is needed to inform conservation and recovery planning for the species, particularly since the species is not universally well-regarded by ocean users. We conducted extensive archival research and oral history interviews to characterize past and current human-monk seal relationships in the Hawaiian archipelago. Though the prehistoric period remains poorly understood, our findings suggest that monk seals were likely rare but not unknown to Hawaiians in the late 19th and early 20th centuries. References are made to monk seals in Hawaiian-language newspapers, traditional knowledge forms, and in familial histories. Our findings also suggest that the species is not uniformly known in contemporary Native Hawaiian communities and that perspectives about the nature and significance of the monk seal appear to be related to place-specific histories and specific groups of knowledgeable persons. We introduce the concept of 'cultural endemism' to characterize this pattern of socio-cultural heterogeneity. This information may prove useful in crafting culturally appropriate management plans for the species and for developing effective outreach activities to engage coastal communities and ocean users.

Key Words: endangered species; wildlife conflict; cultural endemism; historical ecology; human-environment interactions

Introduction

The successful management and recovery of endangered species is dependent on a diverse set of social factors and conditions that shape human interactions with those species and the environments they occupy (Kellert, 1986, Kellert, 1985). In many cases, economic, technological, demographic, institutional, perceptual and political forces will determine the prospects for successful species recovery and stewardship (Bath, 1998, Jacobson and Duff, 1998). Despite this, most endangered species programs focus primarily on the biological aspect of endangered species, and in comparison relatively little research is directed toward human dimensions of endangered species (Jacobson and Duff, 1998, Kellert, 1985).

Social and perceptual factors are especially important in understanding how human societies interact with endangered species and their habitats in places characterized by human-wildlife conflict (Bentrupperbaumer et al., 2006, Tarrant et al., 1997, Clark et al., 1994). Conflict can develop through a myriad of different pathways but commonly stem from the social values, norms and perceptions that structure human-environmental interactions. Kellert (1985:529), identifies the full range of values that society derives from endangered wildlife, and categorizes seven discrete types, including: 1) naturalist/outdoor recreational; 2) economic; 3) moral or existence; 4) scientific; 5) utilitarian; and 6) cultural, symbolic and historical values. These values, like other social phenomena, are not static but evolve through time as societies change.

Social science research can be used to characterize the full range of social values, meanings and perceptions of endangered species and can also provide important baseline information that can be used to assess changes in these values and perceptions over time. Social assessments can be applied to determine the likelihood of success of different proposed conservation actions or to aid in the development of more effective public education and outreach programs. Such data are potentially valuable for resource managers and management programs seeking to engage more effectively with communities in species recovery and conservation efforts.

Human values and perceptions are strongly influenced by the socio-cultural setting and knowledge systems that develop in a place-based manner. This is particularly true in the Pacific Islands and similar settings where indigenous cultures developed in-depth traditional ecological knowledge systems and close relationships with the physical environments that provided goods, values and services upon which they depended. In Polynesian communities, the values and perceptions of species and the ecosystems in which they are embedded are strongly influenced by traditional socio-cultural practices, uses, and knowledge systems. Ecosystem constituents are primarily viewed not as independent units, but as part of an interconnected system in which human are embedded as natural constituents and stewards of environmental conditions (Glazier, 2011, Jokiel et al., 2011, Handy and Pūkui, 1972).

Certain marine and terrestrial species can, however, take on unique meanings and significance, which in turn mediate the way human societies interact with those species and its associated habitats. For example, many Pacific Islander cultures developed customary restrictions on use of sea turtles which served to limit harvest and conserve the species (Rudrud, 2010, Allen, 2007). Socio-cultural values and perceptions have evolved as island communities have been subjected to changing socio-economic, political and institutional conditions, and as a result there is a need

to understand how past relationships with endangered species affect current and future conservation efforts. This is particularly important for endangered species, many of which are threatened with extinction due to human activities.

The purpose of this article is to characterize the historical and contemporary significance of monk seals in Native Hawaiian culture. Monk seals are highly endangered and since they gained protection under the Endangered Species Act their populations have been increasing in the main Hawaiian Islands. This has led to increased conflicts with ocean users – particularly fishers – which have resulted in some cases in intentional killings of monk seals. Below, we provide a background context for the study and describe the social-ecological parameters of human-monk seal interactions in Hawai‘i. Next, we describe our mixed methodology and present the detailed results of our research. Finally, we discuss the significance of our findings and how the socio-cultural significance of endangered species can be applied to current challenges in conservation and species recovery planning. We introduce the concept of ‘cultural endemism’ to characterize the place-specific context and socio-cultural factors that influence indigenous societies relationships with natural resources. It is hoped that the research findings can help inform culturally-appropriate conservation planning for endangered species and enhance understanding of the human dimensions of wildlife and ecosystems.

Background

The Hawaiian Islands were among the last places on Earth to be colonized by humans. Voyaging Polynesians arrived in Hawai‘i centuries ago (Wilmshurst et al., 2011) and thereafter they established complex societies and resource production systems that supported a dense human population with complex sociopolitical systems (Kirch, 1985, Vitousek et al., 2004). Polynesians introduced exotic species and utilized both terrestrial and marine ecosystems for basic subsistence, altering endemic populations of fauna and flora and transforming natural ecosystems into cultural land- and seascapes in the process (Burney et al., 2001, Athens, 2009, Maly, 2001, Kaneshiro et al., 2005, Kittinger et al., *In review*).

Hawaiian monk seals are estimated to have inhabited the Hawaiian archipelago for approximately 14 million years and thus the species has adapted to long-term geologic changes in the archipelago (Kenyon and Rice, 1959). Monk seal habitats include shallow water reef habitat for pupping, weaning and foraging, sandy beach areas for hauling out, and deeper reef areas for foraging (Kenyon and Rice, 1959, NMFS, 2007). Hawaiian monk seals are apex predators in coral reef environments, but exhibit extreme sensitivity and vulnerability to human stressors, which renders the species vulnerable to local extirpation and extinction (Ragen and Lavigne, 1999, Ragen, 1999, Kenyon, 1972, Kenyon, 1980, Gilmartin, 2002). The Hawaiian monk seal population is currently comprised of approximately 1,200 individuals and is declining at a rate of approximately 4% per year (Antonelis et al., 2006, NMFS, 2007).

Currently, the majority of Hawaiian monk seals are found in the remote and primarily uninhabited Northwestern Hawaiian Islands (NWHI), but a smaller population is growing in the Main Hawaiian Islands (MHI) (Baker and Johanos, 2004) (Figure 1). Monk seals in the MHI are increasing in number and this region is where the majority of human-monk seal conflicts have

occurred. Monk seal recovery is not universally supported in Hawaiian communities, and some ocean users view the species as a nuisance or threat to traditional activities such as subsistence fishing. For example, three monk seals were recently killed by apparent intentional shooting, and foul play cannot be ruled out in the recent deaths of at least three other seals. These conflicts are a major concern for long-term conservation and recovery planning for the species, particularly considering the continuing decline in NWHI populations and increase in the populated MHI.

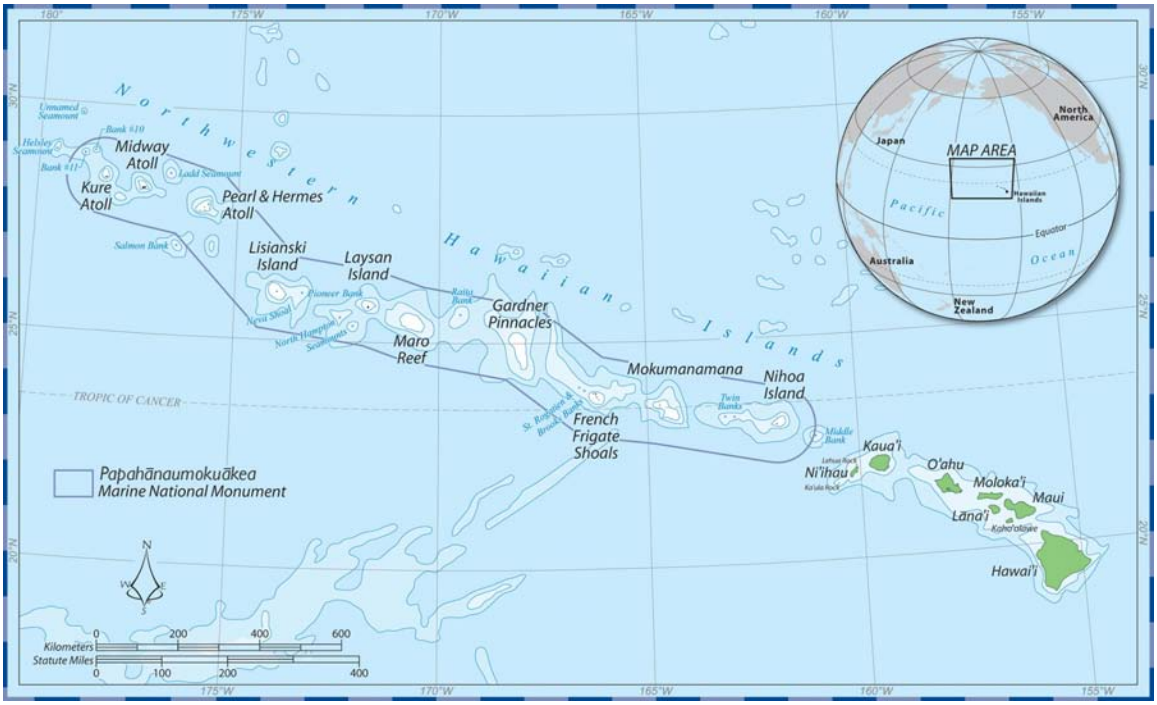

Figure 1: Map showing the Hawaiian Archipelago, comprised of the inhabited high islands of the main Hawaiian Islands (in green) and the uninhabited reefs, banks, and atolls of the Northwestern Hawaiian Islands, which are protected as part of the Papahānaumokuākea Marine National Monument. Map courtesy of the NOAA Papahānaumokuākea Marine National Monument Office.

Methods

To characterize the historical and contemporary significance of the endangered Hawaiian monk seal, we employed two primary methods, including: 1) archival research and document analysis and, 2) ethnographic and oral history interviews with Native Hawaiian community members, elders (*kūpuna*) and cultural practitioners. Archival research efforts targeted a broad range of historical and contemporary information about human-monk seal interactions and cultural significance of the species in documents retrieved from various institutional and online repositories. The research targeted both English-language and Hawaiian-language sources, including the extensive collection of archived Hawaiian-language newspapers and sources in existing compilations of historical documents (Hiruki and Ragen, 1992, Balazs and Whittow, 1979). English-language archival sources also included:

a. Published archaeological reports, containing zooarchaeological faunal assemblages and midden contents;
b. Archival and historical documents containing anecdotal or descriptive data (e.g. reports from naturalists, missionaries and explorers; whaler's logbooks; historical newspapers);
c. Published ethnographic information (e.g. recorded oral histories; interviews with elders); and,
d. Contemporary ecological data (e.g. population studies; genetic studies).

Our research also involved an exhaustive search in Native Hawaiian language newspapers for references to the Hawaiian monk seal. Newspaper searches were conducted in online databases of published and searchable newspapers (Ulukau, 2003, Alu Like Inc. et al., 2006). The Hawaiian-language newspapers are an unparalleled resource in terms of the volume of material and richness of description provided by Native Hawaiian contributors (Nogelmeier, 2010a), and only ~10% of published newspapers have been electronically scanned and made searchable (Nogelmeier, 2010b). As part of the search process, a list of Hawaiian language terms for the monk seal was developed and the etymology of these terms was investigated. All references were translated into English, categorized in terms of the type of account (e.g. fishing story, legend, chant, prayers, etc.) and then analyzed, resulting in an interpretation of each account and its meaning or significance in Native Hawaiian culture.

We also conducted unstructured ethnographic and oral history interviews with 30 Native Hawaiian community members, cultural practitioners and elders (*kūpuna*). Respondents involved in the research were known to possess extensive knowledge of endemic Hawaiian species, marine and coastal environments, and historic and contemporary cultural practices or knowledge that may have some association with monk seals. Interviews focused on historical and contemporary cultural connections with the monk seal among Native Hawaiian communities, as determined through respondents' oral testimonies or reported statements about past and current relationships with the species. These oral traditions consist of a rich pool of collective memories among that encompass an inherited culture in Native Hawaiian communities (Kikiloi, 2010). Respondents were identified through a social network sampling process (Hanneman, 2001), which allowed us to identify and characterize interviewees who are particularly knowledgeable of or experienced with monk seals or Native Hawaiian cultural knowledge systems (cf. Romney et al., 1986).

Interviewees were comprised of respondents who exhibited a broad and sometimes conflicting range of views on the monk seal. This purposive sampling of respondents allowed us to characterize a multiplicity of perspectives among community members, which can reveal different values and information that exist in different social groups and knowledge systems (Shackeroff et al., 2011). The interview methods used by the researchers followed existing standards in social science research (Bernard, 2006, Kvale, 1996, Seidman, 1998). Interviews were conducted in a manner that was culturally appropriate and which respected the traditional ecological knowledge systems of the respondents (Shackeroff and Campbell, 2007).

Interview data were analyzed using an iterative approach to describe, categorize and interpret our qualitative interview data. Most interviews were audio- or video-recorded and, together with

notes taken during the interviews, responses were coded into topical categories. We adopted an iterative methodology that is utilized commonly in grounded theory approach, a method that allows the researcher to develop theory on the research topics addressed while simultaneously grounding the results in empirical observations or data (Glaser and Strauss, 1967, Schatzman, 1991, Thomas and James, 2006). Our methods, however, focused more on an inductive analysis to systematically determine patterns in our respondents' narratives rather than on theory generation. The iterative methodology employed was designed to establish rigor in the analysis of our qualitative information (Baxter and Eyles, 1997, Barbour, 2001).

In addition to interviews, we also sought other evidence of monk seals in Native Hawaiian cultural knowledge, including Hawaiian historical accounts, chants (*oli*) songs (*mele*), prayers (*pule*), existing oral histories, place names, and other traditional and customary knowledge forms. We also engaged in other ethnographic research methods including site visits and participant observation in Hawaiian communities and places with names potentially referencing monk seals.

Results

Our research uncovered a diversity of information about historical and contemporary relationships between Hawaiian communities and the monk seal. Below, we discuss our findings discovered through different sources and research efforts. Additional material referenced in these sections is included in the Appendix. It should be noted that although our research included a comprehensive search of sources of cultural knowledge, additional information may still be waiting to be discovered in extant Hawaiian literature and traditional knowledge forms. In addition to this, 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.

English-Language Archival Sources

The results of archival research in English language sources have been published elsewhere (Watson et al., 2011), but a brief overview of these findings and additional description is provided here for context and comparison with other research results. Our research in this diverse set of sources suggests that seal populations were probably locally extirpated in the MHI within the first century after Polynesian settlement (~AD 1250-1350). Pre-human seal populations probably never exceeded 15,000 individuals, which constitutes a small and vulnerable population for a large mammal (Watson et al., 2011). Remains of monk seals in archaeological deposits are limited to just a few sites that primarily date to the historic period (Rechtman, 2011, Office of Hawaiian Affairs, 2010, Rosendahl, 1994), but this evidence suggests that monk seals were opportunistically taken by prehistoric Polynesian hunters. Though several theories still exist, the most likely explanation based on the available evidence is that seal populations were probably rapidly diminished in Hawaiian prehistory by human hunters and harassment by their commensal mammals (particularly dogs [*Canis familiaris*]).

One of the periods that is the least well understood are the first decades after western contact before the Hawaiian language was translated into a written form (AD 1778-1830). During this period, whaling, sealing and other trading vessels increasingly frequented the archipelago and trade between Hawaiian communities and foreigners intensified (Ii, 1993, Kamakau, 1992). Hawaiians became involved in the seal trade as early as 1811 (Ii, 1993), and were conscripted as sailors on whaling and sealing vessels by Hawaiian monarchs (Naughton, 1983, Beechert, 1991, Kuykendall, 1938, Kuykendall, 1957). This period also witnessed major changes in the relationship between commoners and the land, including the abolishment of the traditional Hawaiian religious system (Ralston, 1984, Seaton, 1974), which included restrictions on some marine species (Titcomb, 1972, Beckley, 1883).

Despite several detailed English-language accounts of the Hawaiian Islands that date to this period, no descriptions of seals were recorded in the main Hawaiian Islands (Appendix). This strongly suggests rarity, particularly given many early descriptions come from whalers and sealers that would have been interested in harvesting seals for their oil, or from explorers and naturalists who described other social and environmental contexts in great detail. Of these early descriptions, however, it remains difficult to disentangle which sealing cargoes were derived from ventures outside of Hawaiian waters (e.g. Alaska, the Pacific Northwest, and the California coast) and those which may have been comprised of monk seal populations from Hawaiian waters (Kuykendall, 1929). When seals were discovered several decades later in the remote and uninhabited northwestern Hawaiian Islands, several sealing voyages were undertaken (Cobb, 1905). Seals were also taken opportunistically in the NWHI during this period by visiting ships, including ones bearing Hawaiian monarchs (e.g. Anonymous, 1857). Few monk seals survived the sealing ventures of the 19th century, resulting in near-extinction and extreme rarity throughout the archipelago in the early 20th century (Hiruki and Ragen, 1992).

Hawaiian-Language Newspapers

The Hawaiian-language newspapers are an unparalleled resource in terms of the volume of material and richness of description (Nogelmeier, 2010a). Our search consisted of identifying Hawaiian terms for monk seals and the etymology of these terms. Next, we located articles containing these terms in online databases of digitized Hawaiian-language newspapers (Ulukau, 2003, Alu Like Inc. et al., 2006) and translated these accounts (Appendix).

We discovered many terms for monk seals in our search in Hawaiian-language dictionaries, archives and newspapers, including: *ʻīlioholoikauaua, ʻioleholoikauaua, ʻīlioholoikauaua-a-Lono, ʻīlioheleikauaua, ʻīlioholoikekai, ʻaukai, holoikauaua, hulu, sila,* and *kila* (Table 1). The most commonly used term, *ʻīlioholoikauaua,* roughly translates to "dog running in the rough [seas]" (Pūkui and Elbert, 1986). Two other commonly referenced terms, "*sila*" and "*kila*," are Hawaiian versions of the word 'seal,' and probably date to the post-contact era. Several previously unknown terms were also discovered, including "*hulu*," which is defined in an earlier dictionary as "seal, named for its valuable fur" (Pūkui and Elbert, 1971). This term was also used by some respondents in interviews to reference monk seals (Watson, 2010). Another term "*ohulu*," is defined as a seal hunter (Parker, 1922). The term "*palaoa*" commonly references whales, but in a traditional chant, it may also apply to other marine mammals including monk seals (Nerveza 2010). 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. A full list of Native Hawaiian terms for monk seals and their meanings is provided in Table 1.

Most references to monk seals in Hawaiian-language newspapers use the term *ʻīlioholoikauaua* and date to the mid to late 19th century (Appendix). References to monk seals are primarily used in a neutral tone with little description. For example, writers used the term *ʻīlioholo-ikauaua* to reference seals in translations of English works. Other descriptions use the same term to describe seals on sealing voyages to Alaska and the US Pacific northwest on which Native Hawaiians served as crew members. One writer describes a trip to the arctic where the crew were kept warm by "the pelt of the *ʻīlio-holo-i-ka-uaua* and the other slippery, furry animals," while another writer describes the Arctic as "Just snow is what is seen there, no plants; the polar bear is still important, with the *ʻīlioholoikauaua*, and the sea elephants." Other writers used the term *ʻīliokai* or *ʻīlio o kai* (seadog) and *sila* (seal) in descriptions of sealing expeditions. "These accounts provide little information about the cultural relationship with monk seals but do provide evidence that the name was known to Hawaiian writers during a time in which seals were rare in the Hawaiian Islands. Other references are more telling of cultural relationships, and several contain negative connotations. For example, one writer implores fellow Hawaiians not to "slacken in their moral resolve like the *ʻīlioholoikauaua*," and another writer uses the term loosely as an insult (Appendix). These references provide some evidence that the monk seal was not always viewed in a positive manner, though the context does not provide enough description in order to determine why these views were held.

The Hawaiian language newspapers also provide some evidence that monk seals were harvested and consumed as part of customary practice. For example, one writer writes in a story "what are the things you think we eat here? Turtle liver, shark fin, and the broiled meat of the *ʻīlioholoikauaua*." Another writer suggests that monk seal furs were collected as part of customary tribute to the land managers (*Konohiki*), writing, "and then, they lay down these things the *Konohiki* (land manager) requested: pig, dog, cloth, fiber, fur (ʻo ka hulu), fishing net, everything. These are the goods that we exhibited in ancient days" (Appendix). These descriptions, though limited, suggest that monk seals were harvested for their meat and fur.

Table 1

Term	Definition	Reference / Notes
ʻĪlioholoikauaua	Seal, dog running in the roughness [rough seas]	Pūkui and Elbert, 1986 / entry does not appear in the online dictionary (Ulukau, 2003)
ʻioleholoikauaua*	A rat running beside the wave	Beckwith, 1951
ʻĪlioholoikauaua-a-Lono	The dog running at the voice of Lono	Fornander, 1916-1920 (Vol. IV, pg. 273) / Only known reference
ʻĪlioheleikauaua	The dog running in the waves	Andrade, 2008
ʻĪlioholoikekai	The dog running in the sea	Moʻolelo (oral traditions) from kūpuna and kumu (elders & teachers)
ʻaukai	Seafaring	Moʻolelo (oral traditions) from kūpuna (elders)
holoikauaua	"iʻoa Pearl and Hermes Reef [NWHI]. Lit., [Hawaiian monk seal that] swims in the rough."	Kōmike Huaʻōlelo (2003)
hulu	seal, named for its valuable fur	Pūkui and Elbert, 1971
sila / kila	Hawaiian versions of the English word ʻseal.'	Kōmike Huaʻōlelo (2003) / It is probable that use of this term did not begin until after foreign contact
ohulu (ō-hū'-lu)	"O, to spear; and hulu, fur or feathers. A seal hunter."	Parker, 1922 / Entry does not appear in the online dictionary (Ulukau, 2003)
he ilio o ke kai	Seal	Andrews, 1865
sila pūhuluhulu	Fur seal	Kōmike Huaʻōlelo (2003)
sila Hawaiʻi	Hawaiian monk seal	Kōmike Huaʻōlelo (2003)
ʻĪliopiʻi	"Dog running up and down"; Place name: cape & bay, Kalaupapa peninsula	Hawaiian language newspapers; maps

Table 1: Native Hawaiian terms for the monk seal. Definitions and references are provided, including information derived from other archival and interview research efforts on these terms.

***** There have been several changes in the definitions of some terms in Hawaiian language dictionaries over time (Elbert, 1954). For the term *ʻiole*, one edition of the Hawaiian dictionary defines the term as, "**ʻiole**. 1. Hawaiian rat (*Rattus exulans*); introduced rat, mouse (Oink. 11.29); rodent (see *ʻiole-lāpaki, ʻiole-manakuke, ʻiole-puaʻa*); mole (Isa. 2.20). **hōʻiole**. To behave like a rat. *Fig*., to steal, cheat, lie in wait in order to assail. 2. Name for a sinker of a squid lure." (Pūkui and Elbert, 1971). A later edition of the same dictionary contains the following definition, "**ʻiole** n. 1. Hawaiian rat (Rattus exulans); introduced rat, mouse (Oihk. 11.29); rodent (see *ʻiole lāpaki*, *ʻiole manakuke*, *ʻiole puaʻa*); mole (Isa. 2.20); considered by some an ʻaumakua. Cf. *piko pau ʻiole*, *haumakaʻiole*, *paʻipaʻiʻiole*, *papaʻiole*, *ʻuwīʻuwī* 3. **hō.ʻiole** To behave like a rat; ratlike. *Fig.*, to steal, cheat, lie in wait in order to assail. (PNP kiole)" (Pūkui and Elbert, 1971, emphasis added). The reason for the change in definition is unknown, but

noteworthy in that the later definition specifies that the animal is known to be an *ʻaumakua*. *ʻAumakua* are "family or personal gods, deified ancestors who might assume the shape of…[various animals]" (Pūkui and Elbert, 1986).

Traditional Cultural Sources

In addition to archival and interview research, other sources of cultural knowledge were accessed and reviewed to ascertain information about Hawaiian monk seals. These sources included *mele* (songs), *oli* (chants), *moʻolelo* (oral traditions), and other traditional knowledge forms. One such source is the Kumulipo, a detailed chant that chronicles the creation story, genealogy and mythology of ancient Hawaiʻi (Beckwith, 1951). Previously it was not believed that any references to the monk seal were found in the Kumulipo, but the term "*ioleholoikauaua*" in one section may reference the Hawaiian monk seal (Appendix). 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.

The monk seal is also mentioned in the *moʻolelo* (oral tradition) about the Legend of Hawaii-loa. In this story, the monk seal is described as *ʻīlioholoikauaua-a-Lono*, and is associated with the Hawaiian god Lono:

> After Light had been created or brought forth from the *Po* (the darkness or chaos) the gods looked upon the empty space (*ka lewa*) and there was no place to dwell in. They then created the heavens for themselves. Three heavens did they create or call into existence by their word of command. The uppermost heaven was called "*Lani-Makua*," the one next below was called "*he Lani o Ku*," and the lowest was called "*he Lani o Lono*."
>
> * * *
>
> The first man, generally called Kumu Honua, had a number of names – already mentioned; he was a tall, handsome, majestic looking person, and so was his wife. He was along upon the land for about one century (*kipaelui* or *kihipea*) before his wife Lalo Honua was created.
>
> Among the animals enumerated in the legend as dwelling in peace and comfort with Kumu Honua in Kalani i Hauola were:
>
> Ka puaa 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 puaa maoli (the common hog); ka ilio alii a Kane (the royal dog of Kane); na moo (lizards)… (Fornander, 1916-1920), emphasis added).

This reference is the only known description of the linkage between the god Lono and the monk seal and the only known account of the term "*ka-ilio-holo-i-ka-uaua-a-Lono.*" The association with Lono is also interesting because dogs are typically associated with the god Kane and many other ocean animals are associated with the god Kanaloa.

Another reference to the monk seal may exist in the *mo‘olelo* (oral tradition) about the god Hi‘iakaikapoliopele (Hi‘iaka), whose travels through the archipelago are recorded in a lengthy and detailed chant. In a translated version of the chant, Hi‘iaka describes an area on the island of O‘ahu (Ka‘ō‘io Point): “there is a plain on the inland side and dangerous waters seaward, a place renowned in the saying, ‘Lie calmly in the sea of your chief.’ As we go along we will reach Makaua, land of the Ma‘akua rain. That is where the ‘īlio hā of Kāne dwells, named Kauhike‘īmakaokalani, an uncle of ours” (Nogelmeier, 2006), emphasis added). In the story that follows, Hi‘iaka describes, “ ‘īlio hā is like saying ‘īlio 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).

Though it is unknown if this description explicitly refers to monk seals, the description of the ‘īlio hā as “huge, heavy, plump, and fleshy” and as an “oversized” dog is reminiscent of the physical appearance of monk seals. Unlike the previous *mo‘olelo*, in this story the seal-like animal is associated with the Hawaiian god Kane, who is traditionally associated with dogs.

Hawaiian Place Names

Hawaiian place names serve a variety of functions but commonly convey cultural information and associations with geographical features (Pūkui et al., 1974). Place names are often understood, interpreted, and perpetuated within traditional *mo‘olelo* (oral traditions) that developed in a place-based manner. We performed a search through cartographic and archival sources to identify places in the Hawaiian Islands that potentially reference monk seals. We also undertook several site visits at places believed to be named for monk seals, and captured additional information about these place-names in interviews with local residents and through personal observations.

Several sites in the Hawaiian archipelago were found to possess names that likely reference the Hawaiian monk seal and many other sites were found with names warranting more investigation. One site is located on the remote Kalaupapa peninsula on the rugged north coast of Moloka‘i, which has functioned since historical times as an isolated colony for persons with Hansen’s disease. A small cape and bay in the area, named ‘Īlio-pi‘i, is translated literally as “climbing dog” (Pūkui et al., 1974). The historical name seems appropriate, as monk seals commonly pup on beaches in this area in modern times. Another site, Lae o Ka ‘Īlio, is located in the Hā‘ena community on the rural north shore of Kaua‘i island. Andrade (2008) writes that Lae o Ka ‘Īlio translates to “the headland of the dog,” and “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). Finally, the modern name Holoikauaua has been given to Pearl and Hermes Atoll in the NWHI (Kōmike Hua‘ōlelo, 2003). The name “celebrates the Hawaiian monk seals that haul out and rest” at the atoll (USFWS et al., 2008). Each of these place names possesses significant ecological importance for the monk seals in current context, and at least two, ‘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.

Numerous additional sites throughout the archipelago may warrant more research, including: Kane‘īlio, Kū‘īlioloa, and Pu‘uanahulu. Pūkui notes that Pu‘uanahulu was “perhaps named for a supernatural dog of that name; see Ka-lae-o-ka-‘īlio” (Pūkui et al., 1974). The reference to Ka-lae-o-ka-‘īlio reads: “points at Kona, Hawai‘i; Kau-pō, Maui; northwest Molokai (also called ‘Īlio and Ka-‘īlio). Lit., the cape of the dog. (At the Kona point in a sea pool is the body of Anahulu, a supernatural dog that was changed to stone by Pele. See Pu‘u-anahulu)” (Pūkui et al., 1974). Lae o Ka ‘Īlio point on the northwest tip of Moloka‘i, also known as ‘Īlio point, bears similarity in name to the site in Kaua‘i. The Hawai‘i Department of Land and Natural Resources has linked the ‘Īlio Point, or Kalaeokailio, to an ancient legend of a red dog, rather than a monk seal (DLNR, 2009 [citing Ne et al., 1992]), but monk seals are found in the area (Duvall II, 2009). Another place name is Kīpahulu in the Hāna district of Maui, but interviewees indicated this site was used by seabirds and did not know of any association with the monk seal. Finally, a *heiau* (ritual site) in the Wai‘anae district of O‘ahu island is named Kū‘ilioloa (“The long dog form of Kū”), and *mo‘olelo* about this site reference a dog that would bark at the ocean when enemies were coming. Respondents that identified this site said that although the name has *‘ilio* (dog) in it, it does not necessarily mean it was named after the monk seal.

Interviews in Native Hawaiian Communities

We interviewed a representative cross-section of individuals with different knowledge sets, resource use patterns, perspectives and expertise to uncover cultural information about the Hawaiian monk seal. We also reviewed existing interviews that focused on monk seals, marine environments and similar topics for context. All interviewees indicated that monk seals were relatively new to ocean users in the MHI, with the first personal observations dating to the 1940s and most respondents not indicating experiences with the monk seal until the 1960s or after. These observations were consistent with previously published ethnographic research among local fishermen and community elders (*kūpuna*) in the Hawaiian Islands suggesting perceived rarity among tenured ocean users until the past few decades (Maly and Maly, 2003a–d, 2004). Many respondents noted that their encounters with monk seals have increased in the past few decades, and these perceptions were similar to those expressed by some community members at public meetings about the monk seal (ERM – West Inc., 2011). A separate survey effort indicated that more than 80% of respondents had personally encountered monk seals in the MHI, but their knowledge of the species was relatively limited (SRGII, 2011).

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.

Among interviewees who expressed positive views about the monk seal, a small subset of indicated a strong socio-cultural association with the species. Some interviewees described families on Hawai‘i and O‘ahu islands that consider the species to be *‘aumakua*, the “family or personal gods, deified ancestors who might assume the shape of…[various animals]” (Pūkui and Elbert, 1986). *‘Aumakua* 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 *ʻaumakua* (Pūkui and Elbert, 1986), but this does not necessarily mean that the families have recently adopted this cultural association. *ʻAumakua* 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 *ʻohana*, or family. Respondents have said that the details of such activities are deliberately kept *hūnā*, or secret.

Some respondents shared *moʻolelo* (oral traditions/stories) about monk seals that indicated a mythological association with the species. In one account from the island of Molokaʻi, 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 *moʻolelo* from Hawaiʻi Island tells of a pair of lovers who suffered the wrath of the jealous shark god Kua. 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 (Appendix). These *moʻolelo* 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.

For some *kūpuna*, the specific origins of the animal 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 ʻhānaiʼ [adopted] or ʻhānauʼ [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 (Seldon and Lucas, 2010, Watson, 2010). These views indicate an modern, evolving socio-cultural significance ascribed to the species by some interviewees, who draw on traditional conceptions of environmental and resource stewardship in relation to the species.

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. 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 Hawaiʻi 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 (*ʻiwi*) found in archeological excavations or petroglyphs (*kiʻi pōhaku*) depicting monk seals. Respondents on Maui were not aware of any place names, sacred sites (*wahi pani*) or fishing shrines (*koʻa*) 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 *ʻaumakua* (spiritual family guardian).

The most commonly cited source of human-monk seal conflict is negative interactions with fishers (primarily men in Hawai‘i). Fishing has a long history in Hawai‘i and is embedded in the socio-cultural traditions and subsistence lifestyles of Hawaiian communities (Glazier, 2007, Titcomb, 1972). 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.

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 (Kinan and Dalzell, 2005, Rudrud, 2010). Ancient cultural knowledge is believed to be non-existent 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.

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 (Figure 2). 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 nearly three decades ago. 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 (Robinson, 2008). 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.

Figure 2: ‘Īliopi‘i point, Kalaupapa peninsula, Moloka‘i, a rural community that has developed a relatively conflict-free relationship with monk seals. As a result, monk seals have flourished in this area. Photo by Patrick Doyle.

Discussion

Findings of the archival research component of this project suggests that the Hawaiian monk seal was likely extirpated in the main Hawaiian Islands soon after voyaging Polynesians settled in the archipelago. Though several other competing hypotheses remain (Watson et al., 2011), based on our review of the available information the most likely explanation is that seal populations were probably rapidly diminished by human hunters and harassment from their commensals. This theory has been advanced before in several forms (e.g. Kenyon, 1980), but to our knowledge has not been substantiated with a comprehensive review and analysis of archival sources. Monk seals remained rare in the MHI through the early historical period, and were hunted to near extinction once populations were discovered in the NWHI. In the post-sealing era of the early 20th century, various human perturbations in the NWHI kept populations relatively low until the species was protected under the Endangered Species Act in the 1970s (Kenyon, 1972, Kenyon, 1980). Starting in approximately the mid-1990s seal populations have increased in the MHI, leading to increased conflicts with ocean users (Baker and Johanos, 2004).

Cultural Endemism and the Heterogenous Production of Knowledge

Our research on the socio-cultural significance of the species suggests that the monk seal is not uniformly known among Native Hawaiian communities. There is little evidence that monk seals played a significant role in traditional Hawaiian culture in prehistoric (<AD 1778) or historical times. The cultural references to the monk seal that were found appear to be sequestered in specific knowledge systems ascribed to either a specific geographic location, familial association or oral tradition. Cultural information about the species is also inconsistent in Native Hawaiian cultural knowledge forms. For example, the reference to *ka-ʻīlio-holo-i-kauaua-a-Lono* associates monk seals with the god Lono, while other *moʻolelo* point to an association with a different god (e.g. Kū; Kane) or to a local demi-god or place name. Knowledge thus appears to be heterogenous in distribution among Native Hawaiian knowledge domains.

We advance the notion of 'cultural endemism' to explain how socio-cultural knowledge domains evolve and are maintained in society. We define cultural endemism as the set of socio-cultural values, norms, practices and traditions that develop in a place-specific context for a discrete or set of linked natural or anthropogenic phenomenon. The development of cultural endemism for a species appears to be a result of reciprocal interactions, whereby the most vulnerable taxa are reduced faster than the development of a cultural profile, and high-value resources that are more resistant to initial impacts become more fully integrated into traditions, values and practices (Kittinger et al., *In Review*).

Our research on the monk seal suggests that although the monk seal is biologically endemic, the species is not uniformly culturally endemic in Hawaiian communities. This heterogeneity can be explained by two processes, including: 1) Species rarity and non-uniform distribution in prehistoric and historic times, and; 2) The dispersed mode of traditional knowledge production in Hawaiʻi. Historical patterns of anthropogenic impacts likely caused the monk seal to become rare ecologically in the MHI shortly after Polynesian settlement, and this pattern persisted into

the post-contact and modern eras. Ecological rarity likely precluded the uniform development of a cultural profile for monk seals and further integration into Native Hawaiian cultural practices and traditions. In some areas, monk seals have been incorporated into cultural lore and memory, but these cultural references appear to be rare and not widely known to the broader Native Hawaiian community.

Diversity and lack of consistency in cultural sources and contexts is also likely contributed to the dispersed manner in which knowledge is generated, maintained and built upon in Native Hawaiian communities. Traditionally, cultural knowledge systems accumulate at the local level through kinship networks and familial ties rooted in traditionally circumscribed communities, defined as mountain-to-sea systems based in single watersheds (*ahupua‘a*). The local development of situated knowledge may have aggregated at higher levels through the indigenous governance systems that linked individual communities (*ahupua‘a*) into regional districts (*moku*) and through the dispersal of cultural traditions. Because knowledge was preserved in non-written forms (e.g. oral, dance traditions), the production of knowledge resulted in a heterogenous, poly-rhetoric knowledge landscape with variation due to social and environmental geography (Nogelmeier, 2010a). The dispersed knowledge production system explains spatial variation in cultural practices and traditions, and is likely responsible for the different names, cultural associations and significance ascribed to monk seals. Ecological rarity may have further contributed to the development of different patterns of cultural endemism in geographically defined communities and may explain inconsistencies in oral traditions and names.

Though historically monk seals may no have been uniformly endemic to Native Hawaiians, the species is currently developing a more substantive cultural profile in contemporary Hawaiian communities. This is due in part to the increased occurrence of monk seals in the MHI, making them more common throughout the MHI. Perceptions of the monk seal appear to be dichotomous, with one epistemic community that views monk seals as alien and another set of communities that have retained, enhanced or engendered a Native Hawaiian cultural association with monk seals. Community members adverse to the monk seal associate little or no historical cultural references to monk seals, primarily include fishers and their families. Such persons tend to associate the monk seal with increased restrictions on cultural activities and practices, particularly fishing.

Communities that are developing a more substantive cultural profile for monk seals are dispersed and tend to be rural, somewhat isolated, and less integrated in the socio-economic systems that support urban communities in the archipelago. McGregor has termed such communities as cultural *kīpuka*, where traditional livelihoods, cultural practices and lifeways have persisted relatively untouched, and which provide the seeds by which Native Hawaiian culture is regenerated, relearned and revitalized in the setting of modern Hawai‘i (McGregor, 2007). Kikiloi (2010) has posited that this process of re-learning and developing new knowledge is a fundamental aspect of sustaining a Hawaiian cultural identity and spiritual connections to land and place. Notably, integration of traditional knowledge systems with western conceptions and methodologies occurred historically (Beamer and Duarte, 2006) and is increasingly becoming common in the modern context (Jokiel et al., 2011).

Waldman has described a process of "eco-social anomie," where as species disappear, they lose both relevance to a society and the constituency to champion their revival, further hastening their decline (Waldman, 2010). In the case of the monk seal, the process appears to be the reverse. The re-colonization of the MHI by monk seals over the past few decades has enlivened user conflicts and has brought to the forefront conflicting values and perceptions of the species. The future development of a cultural profile for monk seals will depend largely upon how Hawaiian communities will interact with the species.

Applying Socio-Cultural Dimensions of Wildlife to Conservation

From a social perspective, understanding how humans interacted with protected species in the past and in contemporary communities can help inform modern management and conservation actions (Cordell et al., 1999, Tarrant et al., 1997, Watson et al., 2011). The management of endangered monk seal populations, for example, will likely depend in part on the ability of managers and their conservation programs to engage productively with island communities in stewardship and recovery efforts. Social research in these communities can provide critical information regarding the values and perceptions of local stakeholders, and archival research can help further clarify how human-monk seal relationships have changed through time.

As the monk seals have increased in the MHI, community concerns have emerged about the affect this increased population will have on valued cultural resources and subsistence activities, including fishing. Among some community members, there is a strongly held belief that the monk seal is not culturally endemic, which is a concern for species conservation efforts as interactions with ocean users are likely to increase. The MHI provide increased habitat and carrying capacity, particularly in the availability of sandy beaches (Ragen, 2002), and the establishment of small but growing rookeries in habitats in the MHI provide an important hedge against the possibilities of future major perturbations (e.g. hurricanes, oil spills). Among community members who hold adverse views about the monk seal, the limited information about historical cultural associations may help to alleviate some beliefs and misperceptions, but continued views of the monk seal as alien to Hawaiian culture are likely to persist among some community members and may have historical precedent in Hawaiian language newspapers and the Kumulipo. On the other hand, some communities have independently developed stewardship programs and have minimized human-monk seal conflicts.

This heterogeneity in values and perceptions among Hawaiian communities could help inform or pro-actively evaluate specific management actions. For example, the current practice of translocation of seals from the NWHI to the MHI is viewed as an egregious practice by many fishers, both because of the perceived threat of additional monk seals as competitors for fisheries resources, but also as evidence of the intrusion of federal government programs on local customs and practices. Translocations, and other management actions that may increase user conflicts, ideally should be evaluated within a spatial context to minimize conflicts with specific user groups and may also be aided through involvement of user groups and stakeholders in participatory decision-making processes.

In conclusion, it appears that ecological rarity may have precluded the consistent development of a cultural profile for monk seals in the Hawaiian archipelago. The species is not uniformly

culturally endemic in Hawaiian communities, but our research has revealed significant evidence of cultural associations and supports the notion that the species were not unknown to Hawaiian communities in historical times. The future of monk seal recovery will depend in part on the productive engagement of Hawaiian stakeholder groups, which can be aided by assessments of socio-cultural values, perceptions and practices associated with species and the environments in which they are embedded.

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Appendix

Table of Contents

1.0 Kumulipo

Kumulipo (Beckwith, 1951)
Ka Wa Eone / Chant Six

0539. O kupukupu kahili o Kua-ka-mano
Many new fines of chiefs spring up
0540. O kuku ka mahimahi, o ka pihapiha kapu
Cultivation arises, full of taboos
0541. O ka holo [a]na kuwaluwalu ka linalina
[They go about scratching at the wet lands
0542. Holi [a]na, hoomaka, hoomakamaka ka ai
It sprouts, the first blades appear, the food is ready] [?]
0543. Ka ai ana ka piipii wai
Food grown by the water courses
0544. Ka ai ana ka piipii kai
Food grown by the sea
0545. Ka henehene a lualua
Plentiful and heaped up
0546. Noho poopoo ka iole makua
The parent rats dwell in holes
0547. Noho pupii ka iole liilii
The little rats huddle together
0548. O ka hulu ai malama
Those who mark the seasons
0549. Uku lii o ka aina
Little tolls from the land
0550. Uku lii o ka wai
Little tolls from the water courses
0551. O mehe[u] ka akiaki a nei[a] haula
Trace of the nibblings of these brown-coated ones
0552. O lihilihi kuku
With whiskers upstanding
0553. O peepee a uma

They hide here and there
0554. He iole ko uka, he iole ko kai
A rat in the upland, a rat by the sea
0555. He ʻiole holo i ka uaua
A rat running beside the wave
0556. Hanau laua a ka Pohiolo
Born to the two, child of the Night-falling-away
0557. Hanau laua a ka Poneeaku
Born to the two, child of the Night-creeping-away
0558. He nenee ka holo a ka iole uku
The little child creeps as it moves
0559. He mahimahi ka lele a ka iole uku
The little child moves with a spring
0560. He lalama i ka iliili
Pilfering at the rind
0561. Ka iliili hua ohia, hua ole o ka uka
Rind of the ʻohiʻa fruit, not a fruit of the upland
0562. He pepe kama a ka po, hiolo i hanau
A tiny child born as the darkness falls away
0563. He lele kama a laua o ka po nee aku
A springing child born as the darkness creeps away
0564. O kama a uli a kama i ka po, nei la
Child of the dark and child in the night now here
0565. Po--no
Still it is night

2.0 Moʻolelo of Hiʻiakaikapoliopele (Hiʻiaka)

Translation by M. Puakea Nogelmeier (Nogelmeier, 2006:161-162)

As Hiʻiaka travels through Oʻahu on her way to Kauaʻi, she describes an area near Kaʻōʻio Point: “there is a plain on the inland side and dangerous waters seaward, a place renowned in the saying, ‘Lie calmly in the sea of your chief.’ As we go along we will reach Makaua, land of the Maʻakua rain. That is where the ʻīlio hā of Kāne dwells, named Kauhikeʻīmakaokalani, an uncle of ours”

The translation continues:

> “Hey, dear friend!”
>
> Wahineʻōmaʻo responded, “Yes?”
>
> Then Hiʻiaka asked, as her hand indicated a ridge of steep cliffs descending sharply to the read, “Do you see that line of cliffs overgrown with ti leaves?” Wahineʻōmaʻo agreed that she did, and her friend asked again, “Do you see that stone lying there, shaped like an ʻīlio, a dog, with the head, the body, and all the features of a dog?”

Looking carefully at the stone her friend pointed out, Wahine‘ōma‘o could make out a great strong that looked just like a dog lying down with its head up, facing inland of the cliff. When Wahine‘ōma‘o had spotted the stone, she said, “Oh Hi‘i, I do see the stone you are talking about; it is like a great dog. But our dogs are tiny, and that one is huge. That is amazing. Was that rock craft like that by the people of this pace? What is the nature of that stone, my friend?”

“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‘īmakaolani. He is the ‘īlio hā that Kane brought from Kahiki, and he is always seen yonder, at Ka‘ō‘io Point, 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.

As I told you, this ‘īlio hā belongs to Kāne, and his lineage is recited, for he is from Kumuhonua and his wife Polohina. His lineage chant is a prayer memorized by our ancestors. Just so you will understand, I shall show you a bit of that prayer, and here it is.”

And then Hi‘iaka recited the prayer below, shown here by the writer as a hay in this version of the Story of Hi`iaka.

[CHANT SIXTY-TWO]

The supernatural ‘īlio hā rules the island
Born of the royal ones, Kūhonua
Polohaina as his wife
Royal ones made scared by Kāne

“And what is an ‘īlio hā?” Wahine‘ōma‘o asked her friend.

“Yes, replied Hi‘iaka, going on to say, “There is much confusion among people about this thing, an ‘īlio hā. Some thought it was a form of mo‘o [lizard], but that is not true. ‘Īlio hā is like saying ‘īlio 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 …”

3.0 Mo‘olelo of Pinao and Kamālama at Ka Lae o ka ‘Īlio, Hawai‘i Island

The following is an oral tradition and story (*mo‘olelo*) from a kūpuna 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.

Respondent:

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.

4.0 Historical English Language and Translated Hawaiian Language Sources

Early observations of the Hawaiian Islands were recorded by explorers, traders and merchants, whaling and sealing crew members and captains, missionaries and Native Hawaiians. These written accounts vary with respect to their description, but most contain information about coastal environments and social relationships with these ecosystems. Of the sources listed below (summarized in part by Marion Kelly in the forward to Freycinet, 1978), no references to the Hawaiian monk seal were found (Watson et al., 2011).

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Broughton 1804
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Corney 1965
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Ii 1993
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Krusenstern 1821
La Pérouse 1807
Langsdorft 1817
Ledyard 1781
Lisiansky 1814
Malo 1951
Mathison 1825
Meares 1790
Mortimer 1791
Portlock & Dixon 1789
Quimper Benitez del Pino 1822

Stewart 1828
Turnbull 1813
Vancouver 1798, 1801

5.0 Hawaiian-Language Newspapers

Misc. Notes	ʻŌlelo Hawaiʻi (Hawaiian)	English translation
KHH 1a before & 1a (& 1 b before & b/c)	**Ka Hae Hawaiʻi** ʻOkatoba 19, 1859, 115 [ʻAoʻao 6, Paukū 1] Haʻawina XXIV. No ke kākau hōʻike ʻana i nā moku. Paukū 630. ʻAʻole e pono ke kākau hōʻike iā kekahi moku ma kēia Aupuni, ʻaʻole hoʻi e manaʻo iā kekahi moku, he moku Hawaiʻi i loaʻa nā pōmaikaʻi i pili i nā moku Hawaiʻi, ke ʻole ʻo ia ka waiwai ponoʻī a kekahi kanaka kupa a mau kānaka hoʻokupa ʻia paha o kēia Aupuni. Akā hoʻi, ʻo hiki nō ke kākau hōʻike iā kekahi moku, i hoʻomākaukau ʻia no ka lā… [ʻAoʻao 1, Paukū 1 (ka hopena a ka paukū 630 ma luna aʻe)] …waia ʻōkoholā, a no ka ʻimi ʻana i nā **ʻīliokai**, ma ka moa[na] o ka mea nona kekahi hapa o ia moku, inā he kanaka kupa ia a he kanaka kupa ʻole paha, a inā e noho paʻa a[n]a ʻo ia i loko o kēia Aupuni. [ʻAoʻao 2, Paukū 3] Paukū 636. Ma ke kākau hōʻike ʻana i kekahi moku, e like me ka ʻōlelo a ka paukū ma luna aʻe nei, e koi aku ka Luna Dute Nui, i ka mea nāna i noi mai a ʻo ke kākau hōʻike ʻana, e hāʻawi mai ʻo ia i palapala hoʻopaʻa me nā hope kūpono i ka manaʻo o ka Luna Dute Nui, no nā dālā ʻaʻole ʻemi mai ma lalo o nā haneri ʻelua, ʻaʻole hoʻi ʻoi [a]ku i ʻelua tausani, e hoʻohālike ʻia e ka Luna Dute Nui me ka nui o nā tona o ka moku; e ʻōlelo ana ia palapala hoʻopaʻa, e hana ʻia ka palapala hōʻike i ke kākau ʻana no ka moku, āna i hāʻawi ʻia ai wale nō, ʻaʻole hoʻi e kūʻai ʻia, a e	**The Hawaiian Flag** October 19, 1859, 115 [Page 6, Paragraph 1] Article XXIV. Regarding writing bonds for vessels Paragraph 630. This vessels ought not be a written bond, without due consideration of this vessel, a Hawaiian vessel with all profits acquired belonging to Hawaiian vessels, when he refuses the due assets of a citizen and one who may become a citizen of this Kingdom. But also, a vessel may give written bond, prepared for the day… [Page 1, Paragraph 1 (end of paragraph 630 directly above)] …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. [Page 2, Paragraph 3] 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

Misc. Notes	ʻŌlelo Hawaiʻi (Hawaiian)	English translation
	hāʻawi lilo ʻole ʻia, a e hoʻolilo ʻia paha ma ke ʻano ʻē aʻe, i kekahi kanaka; a inā e lilo ia moku a pau, a ʻo kekahi hapa paha o ka moku, inā ʻaʻole ia he moku ʻōkoholā a moku ʻimi **ʻīlio o kai**, no kekahi haole a mau haole paha i kupa ʻole ma kēia ʻAupuni, a inā paha e pōʻino, a i lawe pio ʻia paha e kekahi ʻenemi, a i hoʻopau ʻia i ke ahi, a i wāwahi ʻia ka moku paha, a laila, e hoʻihoʻi ʻia mai ka palapala hōʻike i ka Luna Dute Nui, ma loko o nā Mālama ʻeono, ma hope iho o ia hoʻolilo ʻana o ka moku i ka ona ʻē, a ʻo kona pōʻino ʻana, a lawe pio ʻana, a pau ʻana i ke ahi, a wāwahi ʻana paha; Akā hoʻi, inā i lawe pio ʻia a pau i ke ahi, a pōʻino paha, a laila, e hoʻokuʻu ʻia nā mea i kākau inoa ʻia i ua palapala hoʻopaʻa la, inā e hoʻomaopopo i ka Luna Dute Nui, ʻaʻole e hiki, ke hoʻopakele i ka palapala hōʻike.	vessel; this insurance policy states, 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** 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, then, the insurance policy shall be returned to the Chief Customs Officer, within six months, after this transference of the vessel to a different owner, for his damage, abduction, consumption due to fire, or ship-wrecked; but also, if extinguished entirely by fire, or misfortuned, then, the things signed on this insurance policy shall be relinquished, as understood by the Chief Customs Officer, [who is] unable to be released from the insurance policy.

Misc. Notes	ʻŌlelo Hawaiʻi (Hawaiian)	English translation
KM 1a (& b/c)	4 Honolulu, Oʻahu Pōʻakahi, Maraki 19, 1894. **Ka Makaʻāinana** ***He Nūpepe ʻŌʻili Pule*** W.H. Kapu Luna Nui a Lunahoʻoponopono F.J. Testa (Hoke), Puʻukū. Pōʻakahi, Maraki 19, 1894. [ʻAoʻao 1, Kolamu 2, Paukū 2] Mai Pūlama Aku. ʻO ia nō kēia mākou e uwalo aku nei i nā hoa makaʻāinana a pau, mai pūlama aku i nā hana a kēia poʻe no ka mea pili i ka pono koho balota no nā ʻelele i ka ʻaha hana	4 Honolulu, Oʻahu Monday, March 19, 1894. **The Citizen** ***A Blessed Newspaper*** W.H. Kapu Chief Officer and Editor F.J. Testa (Hoke), Treasurer. Monday, March 19, 1894. [Page 1, Column 2, Paragraph 2] 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

	kumukānāwai a lākou. Ua lohe ʻia mai aia kā nā poʻe o na Kona a me Kaʻū, Hawaiʻi, ke pīkokoi nui lā e kākau inoa ma lalo o ka hoʻohiki a ua poʻe pākaha nei, a mākou nō hoʻi i hōʻaiʻai aku ai ma ka helu i hala i ka waiwai ʻole o ko ka lāhui kumu hana aku pēlā, no ka mea, ke hoʻokō, ʻo ka ʻāpono ʻana nō ia iā lākou nei, a lilo kā lākou nei ʻino i hana mai ai iā kākou i mea maikaʻi. ʻO kā mākou hoʻi e makemake nei, ʻo ia nō ko kākou kū mai nō i ka wā, ʻoiai, aia iā Amerika Huipū ʻia ka hana. No ka mea, ua ʻoiaʻiʻo loa nō kā mākou i hoʻomahuʻi aku ai inā kākou e kōkua ʻole aku, ʻaʻale loa lākou e ʻike ʻia mai a huli ke ao nei. ʻO ko kākou wā kēia e hōʻike ai i ko kākou lōkahi, ʻaʻohe manawa e aku nō kākou; a inā nō ʻo nā poʻe lawelawe ʻoihana Aupuni a poʻe naʻaua[o] paha ma lalo o lākou, ʻaʻohe nō ia o ka lāhui, akā, e hoʻokuʻu aku nō i kēlā poʻe a ʻaluʻalu aku i ko lākou pono e like lā me nā **ʻīlio holo i ka uaua**. Aka, no ka lāhui hoʻi, e unuhi mai nō a kaʻawale; a laila, lawe aku nō a kai hohonu, hoʻokuene pono iho ʻana i laila.	ballot election for the delegates in their constitutional labor convention. It was heard, there were the groups of Kona and Kaʻū, Hawaiʻi, 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.

Misc. Notes	**ʻŌlelo Hawaiʻi (Hawaiian)**	**English translation**
LH a (&b)	**Lama Hawaiʻi** [ʻAoʻao 1, Kolamu 3, Paukū 3] No kekahi ʻaoʻao kahiko. Eia kekahi mea kupanaha a mākou: ʻo ke kūkini. Inā i ʻōlelo ʻia he mau kūkini: ʻapōpō, holo; a laila, hele maila kanaka he nui loa me ka waiwai, a pili a mau ihola, a laila, hele akula ua mau kanaka lā ʻelua a hiki i ka pahukū. Kūkini maila ua mau kanaka lā, a hopu i ka pahu kekahi, a laila, eo aʻela nāna. ʻOliʻoli ihola ka poʻe i kō. Akā, ʻo ka poʻe i eo, mihi ihola lākou i ke eo ʻana. Inā e ʻōlelo ke Konohiki i nā makaʻāinana, ʻapōpō kākou koʻele a pau, a ahiahi iho, hōʻike i ka waiwai:	**Hawaiian Torch** [Page 1, Column 3, Paragraph 3] 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

	A laila, hana ihola lākou i ua mau mea nei a ke Konohiki i ʻōlelo mai ai: ʻo ka puaʻa, ʻo ka ʻīlio, ʻo ke kapa, ʻo ke olonā, ʻo ka **hulu**, ʻo ka ʻupena, ʻo kēlā mea kēia mea a pau. ʻO ia ka waiwai, a mākou i hōʻike ai i ka wā kahiko.	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.

Misc. Notes	**ʻŌlelo Hawaiʻi (Hawaiian)**	**English translation**
KA 1a (b/c/d)	30 **Ke Alaula** [ʻAoʻao 1, Kolamu 1, Paukū 1] …kou holoholona i mālama loa ai. ʻAi nō hoʻi ʻo Kauka Kaina i ka ʻīlio a me nā ʻiole i loaʻa iā lākou ma luna o ka moku. Loaʻa iā lākou ma nā ʻae kai nā **ʻīlio-holo-i-ka-uaua** a me nā ʻelepani kai. He makaʻu nā kamaʻāina Ekimo i kēia holoholona nui, akā make nō ia lākou i kekahi manawa. I ka hoʻi ʻana mai o Kauka Kalina i Piledelepia, hoʻopuka ʻo ia he buke moʻolelo o nā mea āna i ʻike ai ma ia ʻāina anu, a ua piha ia buke i nā kiʻi nani loa. Eia mai ke kiʻi o ka ʻelepani-kai.	30 **The Dawn** [Page 1, Column 1, Paragraph 1] ...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.
KA 2a (b/c)	**Ke Alaula** Honolulu, Novemaba, 1867 Buke II, Helu 8 [ʻAoʻao 1, Kolamu 2, Paukū 2] Kokoke aku lākou i ka Wēlau ʻĀkau. I ka noho ʻana o lākou i ka moku, holo aʻe kekahi poʻe o lākou i ka ʻākau ha[u] aku ma luna o nā holopapa i kauō ʻia e nā ʻīlio. Ke ʻike lā ʻoukou ma ke kiʻi ma luna aʻe nei i ke ʻano o ka hoʻokaulua ʻia o nā ʻīlio, a hoʻohui ʻia lākou e kauō i ka holopapa. Noho iho ke kanaka ma luna o ka papa, a kauō māmā loa ʻia ʻo ia e nā ʻīlio ma luna o ka hau paʻa. I kekahi manawa ʻelima a ʻeono ʻīlio kā i hoʻopaʻa ʻia i ka papa; i kekahi hoʻi he nui aku – he ʻumikūmāmāhā a ʻumikūmāmāono paha.	**The Dawn** Honolulu, November 1867 Book II, Volume 8 [Page 1, Column 2, Paragraph 2] 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

	Holo aku kekahi poʻe o lākou i ka ʻākau a hiki i ka latitu 82° 30'. I laila ʻike aku lākou i ka Moana Anu ʻĀkau. ʻAkahi nō a launa kokoke aku kekahi i ka wēlau ʻākau e like me kēia – 450 wale nō mile koe a loaʻa aku nō. Akā, ʻaʻole nō he kanaka i hiki aku i laila, no ke anu loa – make e maʻi nō i ke anu. ʻAʻole i loaʻa iā lākou he wahi meheu no Sir Ioane Feranekelina. Ma hope loa mai ua loaʻa ʻia i kekahi poʻe ʻē aʻe. ʻElua a ʻekolu paha o kēia poʻe a Kauka Kaina i loaʻa i ka maʻi a make; hoʻokahi i loaʻa i ke anu ma kekahi wāwae a ʻoki ʻia aku ka wāwae ; lilo hoʻi ʻelua manamana wāwae o kekahi. ʻO ko lākou kapa e mehana ai, ʻo ka ʻili o ka **ʻīlio-holo-i-ka-uaua** a me nā holoholona huluhulu pahe'e ʻē aʻe, e like me kā nā kānaka i hōʻikeʻike ʻia ma ke kiʻi ma luna aʻe nei.	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.

Misc. Notes	**ʻŌlelo Hawaiʻi (Hawaiian)**	**English translation**
KN 1a (b/c)	**Ka Nonanona** Buke 1, Pepa 3, ʻAoʻao 9-01 ʻAugate 3, 1841; 3 ʻAukake 1841 [ʻAoʻao 1, Kolamu 2, Paukū 4] No Ka Ulu Moku ʻImi ʻĀina. I ka mālama o ʻOkatoba 1841, hiki maila ka ulu moku ʻimi ʻāina no Amerika huipū ʻia, ma Honolulu nei. ʻEhā moku, ʻo ka moku nui, (ʻo ka Winisani, a me ka Pīkaka) a ʻelua hoʻi moku nuku iho, (ʻo ka Naiʻa, a me ka Mālolo) a ʻo Kali Wilika ko lākou aliʻi nui. Ua ʻimi ʻāina nā ulu moku nei ma ka huina loa, a ua ʻike lākou i ka ʻāina nui ma laila, i ka lā 13 o Ianuari, 1840, ma ka latitu 65°30 lonitu 104°24. Pōpilikia ʻia ko lākou holo ʻana ma kēlā moana hema, no ka nui loa o ka hau; me he mau moku ʻāina nui lā, e lana wale ana, a e huikau ana, ua hau paʻa nei ma kēlā wahi. Ili ka Pīkaka i ka moku hau, a	**The Multitude** Book 1, Paper 3, Page 9-01 August 3, 1841; 3 August 1841 [Page 1, Column 2, Paragraph 4] 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 Winisani, and the Pīkaka) as well as two nose diving ships [submarines?], the Dolphin, and the Flying Fish and Kali Wilika 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

	mai nāhāhā loa: ua pākela nō na‘e no ke akamai loa o kona kāpena ‘o Hudesona. Holo kokoke i kēlā ‘āina hema ka Winisani i 1700 mile a ‘ike pinepine lākou i ka ‘āina; he ‘āina pali, paupū i ka hau, ‘a‘ole kanaka, he mau walerusa, a me nā **sila** wale nō ko laila holoholona. Pau kēia;	Antarctic ocean, because of the expanse of the ice; like great big islets, just floating, haphazard, ice-locked in that place. The Pīkaka was run aground on an iceberg, and very nearly wrecked: we escaped because of the good judgment of his Captain Hudson. The Winisani 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;

Misc. Notes	**‘Ōlelo Hawai‘i (Hawaiian)**	**English translation**
KNK 1a	**Ka Nūpepa Kū‘oko‘a** [‘Ao ‘ao 1, Kolamu 1, Pauku 6] A i ka pō ‘ana iho, hele akula ia i ka Halepule, me ke ‘eke ma luna o kona kua, he pū‘olo ma lalo o ka lima, a he ipu-kukui ma ka lima. He pāpa‘i ko loko o ke ‘eke, a he ihoiho kukui pokopoko ko loko o ka pū‘olo. I kona komo ‘ana aku i loko o ka pā o ka Halepule, wehe a‘ela ‘ia ho‘okahi pāpa‘i mai loko a‘e o ke ‘eke, a ho‘opili ihola i ka ihoiho kukui ma luna o ke kua a ho‘oku‘u iho i lalo e kolo ai. A wehe a‘ela ‘ia i ka lua, i ke kolu, a pēlā aku, a hiki i ka pau ‘ana o ka papa‘i o loko o ke ‘eke. Ma hope o ia, komo ihola ia he koloka lō‘ihi ‘ele‘ele, he kapa like ‘ia me ko ka **Mōnaka** (Monk) a ho‘opili a‘ela he ‘umi‘umi hina ma kona ‘auwae. No ia mea, ua ‘ano ‘ē loa a‘ela ia, a hele akula. Ia wā, kani ka pele o ka Luakini i ka hora hope, ho‘omaka a‘ela ka ‘Aihue Akamai, e kāhea me ka leo nui, “E lohe ‘oukou e nā lawehala a pau loa! E lohe, e lohe! Ua hiki mai ka hopena o ka honua, a ua kokoke ka lā nui; e lohe, e lohe! ‘O ka mea e makemake ana e pi‘i i ka lani me a‘u, e komo mai i loko o kēia ‘eke. ‘O Petero au, ka mea nāna e wehe a e pani ka puka o ka lani. E nānā aku ‘oukou i loko o ka pā i ‘ike ‘oukou i ka po‘e make e hele ana i ‘ō a i ‘ane‘i, e ‘ohi ana i ko lākou mau iwi. E komo mai, e komo mai i loko i ke ‘eke; no ka mea, e nalo aku ana ka honua.”	**The Independent Newspaper** [Page 1, Column 1, Paragraph 6] And when night came, he went into the Church, with the sack on top of his back, a bag below his arm, and a lamp in his hand. Crabs were inside of the sack, and short kukui-nut candles were inside of the bag. When he entered the yard of the Church, one crab was loosed from inside of the sack, and a kukui nut candle affixed on top of the back and it was released below to crawl. The second was then freed, the third, and so on, until all of the crabs inside of the sack were gone. After this, he put on a black, long cloak, a cloth likened to that of a **Monk’s** and affixed a gray beard to his chin. With this, he was made very different, and then left. At this time, the bell of the Temple rang the last hour, and then the Cunning Thief began to call out with a loud voice, “Listen all of you sinners! Listen, listen! The end of the world has come, and the day of reckoning has approached; listen, listen! Those desiring to rise to heaven with me, come inside of this sack. I am Peter, the one who opens and closes the door of heaven. All of

		you look in the yard and you will see the dead, walking here and there, gathering their bones. Come, come inside of the sack; because, the world shall disappear."
KNK 2a (b/c/d)	**Ka Nūpepa Kūʻokoʻa** ***Ke Kilohana Poʻokela no ka Lāhui Hawaiʻi*** Buke III. Helu 51. Honolulu, Dekemaba 17, 1864. Nā Helu A Pau 100. [ʻAoʻao 1, Kolamu 4, Pauku 10] Ka Lāʻau Ka-umaka e pau ai ka Niniaole O Nā Maka Hūʻalu Pepeʻekue O W.H. Kalae-O-Kaena. E Ka Nūpepa Kūʻokoʻa E; Aloha ʻoe: -- Ua ʻikea iho ma kou ʻaoʻao 3 o ke Kahua kaua o ka lā 27 o ʻOkatoba, Helu 44 o ka Buke III o ke "Kilohana Poʻokela o ka Lāhui Hawaiʻi." Aia ma laila ka pehina (throwing/pelting, as of rain) mai nei a W.H. Kalaeokaena, i nā pōhaku ʻelekū pukapuka o nā hekili kuʻi-pāmalō a ua **ʻīlioholoikauaua** lā, ʻaluʻalu pāpaʻi niho kekē o Koholāloa; e hāhā pōʻele lā i ua iʻa lā o ka ʻāina āna (W.H.K.) e noho lā; me he Ihuanu lā e manaʻo ana e hina o ʻAiwohikupua, i ka hele wahi ʻana a kani ka pola o ka malo; ʻū! e olo hoʻi! hina lā ana kei! a ʻo paha e olo ka hina o ke ʻAʻaliʻikūmakani o Kaʻū iā ʻoe, e nā lāʻauohala kumu Pūhala neʻineʻi.	**The Independent Newspaper** ***The Foremost Champion for the Hawaiian Nation*** Book III, Number 51. Honolulu, December 17, 1864. The Numbers Until 100. [Page 1, Column 4, Paragraph 10] 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 Ihuanu wind thinking to topple over ʻAiwohikupua, going somewhere until the flap of the loincloth sounds; ʻū! resounding! glorious toppling! and perhaps resounding the steady blowing of the ʻAʻaliʻikūmakani wind of Kaʻū to you, the hala leaves of the grove of the low-lying hala trees.
KNK 3a (b/c/d)	**Ka Nūpepa Kūʻokoʻa** Vol. 4, No. 26 29 June 1865 [ʻAoʻao 1, Kolamu 6, Paukū 7]	**The Independent Newspaper** Vol. 4, No. 26 29 June 1865 [Page 1, Column 6, Paragraph 7]

	He ‘Aumoku hou, e holo ana ka Wēlau ‘Ākau. Ke ho‘omākaukau nei o Kapena Osbone (Osborne) o nā Moku manuwā o Beritania e holo i ka Wēlau ‘Ākau. Ua makemake ‘ia i ‘elua mau moku māhu li‘ili‘i me nā kānaka 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‘oma‘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 ‘īlio 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 **‘īlioholoikauaua**, a me nā ‘elepani o ke kai. I loko nā kānaka o nā hale hau e noho ai me nā lole hulu, a ‘o kā 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‘oilo, 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 Borealisa (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 Osebone ma ia wahi, e kaulana nō kona inoa, no ka mea, ‘o ia ke kanaka 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.
KNK 4a (b/c/d)	**Nūpepa Kū‘oko‘a** ***Ke Kilohana Po‘okela no ka Lāhui Hawai‘i,*** Buke XV, Helu 8, Honolulu, Pō‘aono, Feberuari 19, 1876, Nā Helu a pau 742. [‘Ao‘ao 1, Kolamu 4, Paukū 8] “Ba,” i uilani a‘e ai o Nede me nā ‘ano huhū: “he aha kāu i mana‘o ai no nā mea a	**Independent Newspaper** ***The Foremost Champion for the Hawaiian Nation,*** Book XV, Number 8, Honolulu, Saturday, February 19, 1876, The numbers until 742. [Page 1, Column 4, Paragraph 8] “Ba,” queried Nede in anger:

	kākou e ai ai ma‘anei? He ake honu, he lālā manō, a me nā ‘i‘o kō‘ala ‘ia o ka **‘Īlioholoikauaua**.”	“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**.
KNK 5a (b/c/d/e)	**Nūpepa Kū‘oko‘a** ***Ke Kilohana Po‘okela no ka Lāhui Hawai‘i,*** Buke 15, Helu 12 18 Malaki 1876 [‘Ao‘ao 1, Kolamu 2, Paukū 16]	**Independent Newspaper** ***The Foremost Champion for the Hawaiian Nation,*** Book 15, Number 12 18 March 1876 [Page 1, Column 2, Paragraph 16] **‘Īliopi‘i** – cape & bay, Kalaupapa peninsula, *lit. climbing dog*.
KNK 6a (b/c/d)	**Nūpepa Kū‘oko‘a** ***Ke Kilohana Po‘okela no ka Lāhui Hawai‘i,*** Buke XV, Helu 32, Honolulu, Pō‘aono, Augate 5, 1876, Ka Helu a pau 766. 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. [‘Ao‘ao 1, Kolamu 2, Paukū 8] 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 nui 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.	**Independent Newspaper** ***The Foremost Champion for the Hawaiian Nation,*** Book XV, Number 32, Honolulu, Saturday, August 5, 1876, The number until 766. 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. [Page 1, Column 2, Paragraph 8] 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-rough-seas** (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.
KNK 7a (b/c)	**Nūpepa Kūʻokoʻa** ***Ke Kilohana Poʻokela no ka Lāhui Hawaiʻi,*** Buke 18, Helu 11 15 Malaki 1879 [ʻAoʻao 1, Kolamu 3, Pauku 18]	**Independent Newspaper** ***The Foremost Champion for the Hawaiian Nation,*** Book 18, Number 11 15 March 1879 [Page 1, Column 3, Paragraph 18] **ʻĪliopiʻi** – cape & bay, Kalaupapa peninsula, *lit. climbing dog*.

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Appendix L
Draft Section 106 Analysis of Programmatic Environmental Impact Statement for the Hawaiian Monk Seal Recovery Program (2011)

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Section 106 Analysis of the Programmatic Environmental Impact Statement for the Hawaiian Monk Seal Recovery Program

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Pacific Islands Regional Office

April 2011

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Qualifications of Evaluator

36 CFR Part 61 defines the Secretary of Interior's Professional Qualification Standards for the minimum education and experience required to perform identification, evaluation, registration, and treatment activities in historic preservation. Dr. Trisha Kehaulani Watson (JD, PhD American Studies) meets the History (Historic Preservation) Professional Qualification Standards.

I. Background

The U.S. Department of Commerce, National Oceanic and Atmosphere Administration, National Marine Fisheries Service (NMFS), Pacific Islands Regional Office is preparing a Programmatic Environmental Impact Statement (PEIS) to assess the potential impacts of implementing specific management actions and administering a research and enhancement program to improve survival of Hawaiian monk seals (*Monachus schauinslandi*) in the Northwestern and Main Hawaiian Islands.

The purpose of this proposed action is to ensure the long-term viability of the Hawaiian monk seals in the wild, with the eventual goal of achieving reclassification to threatened status and, ultimately, removal from the List of Endangered and Threatened Wildlife under the Endangered Species Act (ESA). Alternatives considered in the PEIS would generally include the provision of limited on-site medical treatment to monk seals and temporarily translocating seals from areas of low juvenile survival to areas of high juvenile survival.

II. Coordination with the National Environmental Policy Act

36 CFR Section 800.8 of the NHPA regulations encourages Federal Agencies "to coordinate compliance with section 106 and the procedures in this part with any steps taken to meet the requirements of the National Environmental Policy Act (NEPA)."

A. Notice Requirements

Under §800.8(c), in order to use the process and documentation required for the preparation of an EA/FONSI or an EIS/ROD to comply with section 106 in lieu of the procedures set forth in §§ 800.3 through 800.6," the agency official must notify both the State Historic Preservation Office and the Advisory Council on Historic Preservation of its decision.

Points of contact are as follows:

State Historic Preservation Officer (Hawai`i):
Bill Ailā, Chairman
Department of Land and Natural Resources
Kalanimoku Building
1151 Punchbowl St.
Honolulu, HI 96813

State Historic Preservation Division Administrator (Hawai`i):
Pua Aiu, PhD, Administrator
State Historic Preservation Division

Department of Land and Natural Resources
601 Kamokila Blvd., Suite 555
Kapolei, HI 96707

Advisory Council on Historic Preservation
Office of Federal Agency Programs
Agency Staff Assignment
National Ocean and Atmospheric Administration (NOAA)
Tom McCullough
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(202) 606-8554

(ACHP contact information obtained from
http://www.achp.gov/docs/OFAP_Agency_Org_Chart.pdf, accessed May 20, 2011)

B. NHPA Compliance

Use of the NEPA process for §106 purposes requires adherence of the following standards under NHPA regulations:

> (i) Identify consulting parties either pursuant to § 800.3(f) or through the NEPA scoping process with results consistent with § 800.3(f);
>
> (ii) Identify historic properties and assess the effects of the undertaking on such properties in a manner consistent with the standards and criteria of §§ 800.4 through 800.5, provided that the scope and timing of these steps may be phased to reflect the agency official's consideration of project alternatives in the NEPA process and the effort is commensurate with the assessment of other environmental factors;
>
> (iii) Consult regarding the effects of the undertaking on historic properties with the SHPO/THPO, Indian tribes and Native Hawaiian organizations that might attach religious and cultural significance to affected historic properties, other consulting parties, and the Council, where appropriate, during NEPA scoping, environmental analysis, and the preparation of NEPA documents;
>
> (iv) Involve the public in accordance with the agency's published NEPA procedures; and
>
> (v) Develop in consultation with identified consulting parties alternatives and proposed measures that might avoid, minimize or mitigate any adverse effects of the undertaking on historic properties and describe them in the EA or DEIS.

III. Analysis

Section 106 of the National Historical Preservation Act addresses the need for federal agencies to take into account impacts, if any, undertakings have on historic properties. Protection of Historic Properties and Section 106 analysis are regulated under 36 CFR Part 800. This part provides guidelines as to conducting an analysis in assessing when and how to undergo Section 106 review.

A. Establishing Undertaking

The first step in initiating the Section 106 process constitutes determining whether or not a proposed Federal action is an undertaking as defined in 36 CFR §800.16(y), which states: "*Undertaking* means a project, activity, or program funded in whole or in part under the direct or indirect jurisdiction of a Federal agency, including those carried out by or on behalf of a Federal agency; those carried out with Federal financial assistance; and those required a Federal permit, license or approval."

It has been determined that this proposed action is an undertaking as defined in §800.16(y).

B. Area of Potential Effect

The Area of Potential Effect (APE) for this project encompasses the range where Hawaiian monk seals are found throughout the Hawaiian Archipelago and Johnston Atoll including the Northwestern Hawaiian Islands (NWHI) and Main Hawaiian Islands (MHI). More specifically, the APE 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 this project, the shore zone includes terrestrial habitat five (5) meters (m) inland from the upper reaches of the wash of the waves, at high edge of vegetation growth or the upper limit of debris. In addition, secondary use areas, such as research field camps in the Northwestern Hawaiian Islands, are also considered for inclusion in the APE. Known shipwrecks or navigational hazards within 300 meters from shore will be evaluated.

C. Determining Presence of Historic Properties

NHPA Section 106 requires the agency to "take into account the effect of (an) undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register (of Historic Places.)" 16 U.S.C. § 470f. NHPA section 101(d)(6)(B) requires agency officials to consult with any Native Hawaiian organization that attaches religious and cultural significance to historic properties that may be affected by an undertaking, regardless of the location of the property. 36 CFR §800.16 provides the following definition of a "historic property":

> (l)(1) *Historic property* means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria.

There may be sites within the APE that would meet this definition of historic properties, including, but not limited to: shipwrecks, sites related to traditional Hawaiian navigation and other seafaring traditions, traditional Hawaiian fishponds, ko`a (traditional Hawaiian fishing shrines typically consisting of piles of coral or stone), Hawaiian heiau (religious structures), Native Hawaiian burial sites, leina (places from which spirits leapt into the spirit world), and other cultural heritage properties and burial sites. NHPA section 106 requires an agency to make a reasonable and good faith effort to identify historic properties, determine whether identified properties are eligible for listing on the National Register, assess the effects of the

undertaking on any eligible historic properties found, determine whether the effect will be adverse; and avoid or mitigate any adverse effects. To this end, NHPA regulations require an agency to provide Native Hawaiian organizations, as consulting parties, with "a reasonable opportunity to identify its concerns about historic properties, advise on the identification and evaluation of historic properties, including those of traditional religious and cultural importance, articulate its views on the undertaking's effects on such properties, and participate in the resolution of adverse effects." 36 CFR § 800.2(c)(2)(ii)(A).

Therefore, for purposes of this analysis, it is assumed that historic properties are present within the APE.

D. Determination of "No Effect"

Upon determining there may be historic properties present, the analysis turns to whether the undertaking is a type of activity that does not have the potential to cause effects on historic properties. If it does not, then the agency official has no further obligations under NHPA section 106.

36 CFR §800.16(i) provides the following definition: "*Effect* means alternation to the characteristics of a historic property qualifying it for inclusion in or eligibility for the National Register." NHPA regulations provide that an "adverse effect" occurs when an undertaking "may alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association." 36 CFR § 800.5(a)(1). Adverse effects may include physical destruction of or damage to all or part of the property; alteration or removal of the property, change of the character of the property's use or physical features; introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's historic features; and transfer, lease, or sale of the property.

As indicated above, the proposed federal program involves the provision of limited on-site medical treatment to monk seals and temporarily removing and translocating a small number of seals from areas of low juvenile survival to areas in the Northwestern Hawaiian Islands to areas of high juvenile survival in the Main Hawaiian Islands. Activities will be brief and conducted by a very small number of individuals. None of the alternatives under consideration in the program entail destruction, modification, or alteration of land, substrate, or habitat, or other properties. None of the proposed activities will introduce visual, atmospheric, or audible elements that effect the features of any historic property. Therefore, it is recommended that the agency official for the U.S. Department of Commerce, National Oceanic and Atmosphere Administration, National Marine Fisheries Service (NMFS), Pacific Islands Regional Office determine that this project has no potential to cause effects on historic properties. Accordingly, initiation of consultation is not required.

E. Notice to State Historic Preservation Officer

Upon determination by the agency official that this project has no potential to cause effects on historic properties, the agency should provide notice to the State Historic Preservation Officer (SHPO) and the State Historic Preservation Division Administrator of its determination. The agency official shall also notify all consulting parties and provide them with the documentation specified in 36 CFR 800.11(e).

Points of contact are as follows:

State Historic Preservation Officer (Hawai`i):
Bill Ailā, Chairman
Department of Land and Natural Resources
Kalanimoku Building
1151 Punchbowl St.
Honolulu, HI 96813

State Historic Preservation Division Administrator (Hawai`i):
Pua Aiu, PhD, Administrator
State Historic Preservation Division
Department of Land and Natural Resources
601 Kamokila Blvd., Suite 555
Kapolei, HI 96707

Under 36 CFR §800.3, once the agency official determines that the undertaking is not an activity that has the potential to cause effects on historic properties, the agency official has "no further obligations under section 106 or this part."

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