

**SUPPLEMENTAL ENVIRONMENTAL ASSESSMENT
FOR THE ISSUANCE OF AN INCIDENTAL HARASSMENT AUTHORIZATION
TO TAKE MARINE MAMMALS BY HARASSMENT INCIDENTAL
TO CONDUCTING SEABIRD AND PINNIPED RESEARCH
IN CENTRAL CALIFORNIA**

AND

**ENVIRONMENTAL ASSESSMENT
FOR THE CONTINUATION OF SCIENTIFIC RESEARCH
ON PINNIPEDS IN CALIFORNIA UNDER
SCIENTIFIC RESEARCH PERMIT 373-1868-00**



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LIST OF ACRONYMS AND INITIALISMS

ANI	Año Nuevo Island
BiOp	Biological Opinion
CE	Categorical Exclusion
CFR	Code of Federal Regulations
DPS	Distinct Population Segment
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FONSI	Finding of No Significant Impact
FR	Federal Register
IHA	Incidental Harassment Authorization
ITA	Incidental Take Authorization
LOA	Letter of Authorization
NAO	NOAA Administrative Order
NEPA	National Environmental Policy Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanographic and Atmospheric Administration
NOR	Notice of Receipt
PEIS	Programmatic Environmental Impact Statement
PR1	NMFS Permits, Conservation, and Education Division
PR3	Endangered Species Division
PRBO	Point Reyes Bird Observatory Conservation Science
PRNS	Point Reyes National Seashore
ROD	Record of Decision
RR	Russian River
SEA	Supplemental Environmental Assessment
SEFI	Southeast Farallon Island
SFB	San Francisco Bay
SFI	South Farallon Islands
SRP	Scientific Research Permit
SSL	Steller sea lions
U.S.C.	United States Code
USFWS	U.S. Fish and Wildlife Service
WEI	West End Island

1. INTRODUCTION

Pursuant to the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*), this Supplemental Environmental Assessment (SEA) analyzes the potential impacts to the human environment associated with the proposed action of the National Marine Fisheries Service's (NMFS) issuance of an Incidental Harassment Authorization (IHA) to PRBO Conservation Science (PRBO) for seabird and pinniped research in central California under section 101(a)(5)(D) of the Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. 1631 *et seq.*). NMFS proposes to issue the IHA to PRBO Conservation Science (PRBO) for two activities: (1) harassment of marine mammals incidental to seabird research on the South Farallon Islands (SFI), Año Nuevo Island (ANI), and Point Reyes National Seashore (PRNS) and ; (2) harassment of marine mammals incidental to pinniped research on SFI in central California.

In 2007, NMFS issued an IHA to PRBO which addressed one year of incidental harassment activities associated with seabird research activities. This SEA incorporates the December 2007 Environmental Assessment (EA) titled, "*Environmental Assessment on the Issuance of an Incidental Harassment Authorization to PRBO Conservation Science to Take Marine Mammals by Harassment Incidental to Conducting Seabird Research in Central California,*" by reference pursuant to 40 Code of Federal Regulations (CFR) 1502.21 and NOAA Administrative Order (NAO) 216-6 § 5.09(d).

Also in 2007, NMFS issued a Scientific Research Permit (SRP) to PRBO to conduct scientific research on pinnipeds specifically around SFI, PRNS, San Francisco Bay (SFB), and Sonoma County near the Russian River (RR). This document also serves as an EA for the incidental harassment of SSLs incidental to the continuation of pinniped research conducted by PRBO under SRP 373-1868-00. Pursuant to NAO 216-6 § 5.05c, the preparation of an EA for SRP 373-1868-00 is required because the change in circumstance relative to environmental consequences may have an adverse effect upon endangered or threatened species, in this case Steller sea lions (SSL, *Eumetopias jubatus*).

Thus, this document titled, "*Supplemental Environmental Assessment For The Issuance Of An Incidental Harassment Authorization To Take Marine Mammals By Harassment Incidental To Conducting Seabird And Pinniped Research In Central California And Environmental Assessment For The Continuation Of Scientific Research On Pinnipeds In California Under Scientific Research Permit 373-1868-00,*" is collectively referred to as the SEA/EA for seabird and pinniped research.

Finally, this SEA/EA incorporates by reference the Categorical Exclusion (CE) Memorandum for SRP No. 373-1868-00 titled, "*Categorical Exclusion Memorandum regarding issuance of a Scientific Research Permit to Point Reyes Bird Observatory Conservation Science [File No. 373-1868].*" However, this document replaces the environmental consequences specific to SSL as analyzed in that CE with the determination that harassment of SSL may occur incidental to PRBO's other pinniped research activities as described in Appendix B. NMFS proposes to authorize the harassment of small numbers of SSL via a one-year IHA from December 12, 2008 to December 11, 2009. Thus, via this incorporation by reference and update of the environmental consequences herein, this document serves as an EA for evaluating the changed circumstances to SRP 373-1868-00, originally issued in April 4, 2007 to PRBO for pinniped research.

1.1. BACKGROUND

On July 28, 2008, NMFS received an application from PRBO requesting an authorization for the harassment of small numbers of pinnipeds incidental to the conduct of two scientific research activities on SFI, ANI, PRNS, SFB, and RR in central California:

1. seabird censuses and monitoring
2. northern elephant seal (*Mirounga angustirostris*) population surveys

1.1.1. Seabird Research

PRBO currently holds a one-year IHA (72 FR 71121, December 14, 2007) which authorizes potential takes of 14 SSL, by level B behavioral harassment, incidental to seabird research. The 2007 IHA, effective from December 12, 2007, until December 11, 2008, also authorized the potential incidental harassment of small numbers of California sea lions (*Zalophus californianus*), harbor seals (*Phoca vitulina richardsi*), and northern elephant seals while conducting seabird research on SFI, ANI and PRNS.

PRBO conducts seabird research year round on SFI, ANI, and PRNS. The presence of researchers traversing the project areas has the potential to disturb hauled-out pinnipeds. For the 2008 IHA, PRBO has requested to incidentally harass 14 SSL while conducting seabird research. Therefore, the number of SSL that may experience level B behavioral harassment during the conduct of seabird research in 2008 is equal to the number that NMFS authorized in the 2007 IHA. PRBO also requested issuance of an IHA for the incidental harassment of six SSL while conducting pinniped research.

1.1.2. Pinniped Research

In 2007, NMFS issued SRP 373-1868-00 to PRBO, effective from April 15, 2007 to April 15, 2012, to conduct scientific research on harbor seals, northern elephant seals, California sea lions, and northern fur seals (specifically around SFI, PRNS, San Francisco Bay, and the Russian River in Sonoma County. At the time, PRBO researchers believed that they could mitigate disturbance to SSL while conducting research. NMFS' evaluation of PRBO's activities supported this finding. Consequently, NMFS did not permit incidental harassment of SSL under SRP 73-1868-00. In addition to the directed take for research purposes, incidental harassment of northern elephant seals, harbor seals, California sea lions, and northern fur seals (*Callorhinus ursinus*) incidental to the research activities was evaluated and authorized under SRP 373-1868-00.

In 2007, PRBO reported that a few juvenile SSL were hauled out in the proposed action area for research on northern elephant seals. Accordingly, PRBO requested an amendment to SRP 373-1868-00 for authorization to incidentally harass up to 20 SSL, annually (72 FR 37513, July 10, 2007). However, NMFS' 2007 Record of Decision (ROD) for the "*Steller Sea Lion and Northern Fur Sea Research Final Programmatic Environmental Impact Statement*," precluded NMFS from processing or accepting any amendments would permit increased take of SSLs under scientific research permits. As a result, PRBO withdrew its request for an amendment to SRP 373-1868-00 that sought 20 takes of SSL (73 FR 43211, July 24, 2008) and, in accordance with the permit

conditions, PRBO either suspended research operations or relocated research operations to avoid incidentally harassing SSL.

To better facilitate their pinniped research objectives, PRBO submitted an IHA application in July 2008 requesting takes for 20 SSLs (14 SSL incidental to seabird research and 6 SSL incidental to pinniped research conducted under SRP 373-1868-00). With regard to the incidental take authorization for SSL during seabird research, the IHA application also requests takes, by Level B behavioral harassment, of California sea lions, harbor seals, and northern elephant seals.

1.2. PUBLIC COMMENT PROCESS

In response to this application to take marine mammals incidental to conducting seabird and pinniped research operations, NMFS is considering the issuance of an IHA under section 101(a)(5)(D) of the MMPA. After reviewing the application for completeness and requirements under the MMPA, NMFS published a notice of receipt (NOR) of PRBO's application and proposed IHA in the *Federal Register* (73 FR 56556, September 29, 2008), for a 30-day public review and comment for the proposed action. NMFS received comments on the proposed permit from the Marine Mammal Commission, which recommended issuance of the permit. NMFS received no substantive comments from the public and received no requests to view the 2008 SEA/EA.

1.3. STATUTORY AND REGULATORY FRAMEWORK

1.3.1. Marine Mammal Protection Act (MMPA)

Sections 101(a)(5)(A) and (D) of the MMPA direct the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of small numbers of marine mammals by United States citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made and either regulations are issued or, if the taking is limited to harassment, notice of a proposed authorization is provided to the public for review. Authorization for incidental takings shall be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), and will not have an unmitigable adverse impact on the availability of the species or stock(s) for certain subsistence uses, and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring, and reporting of such taking are set forth.

Section 101(a)(5)(D) of the MMPA establishes a 45-day time limit for NMFS review of an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of small numbers of marine mammals. Within 45 days of the close of the comment period, NMFS must either issue or deny issuance of the authorization.

Section 104 of the MMPA allows for the issuance of permits to take marine mammals for the purposes of scientific research or to enhance the survival or recovery of a species or stock. These permits must specify the number and species of animals that can be taken, and designate the manner (method, dates, locations, etc.) in which the takes may occur.

1.3.2. Endangered Species Act (ESA)

Permits to take ESA-listed species for scientific purposes (or for the purpose of enhancing the propagation or survival of the species) may be granted pursuant to Section 10 of the Endangered Species Act of 1973 as amended (ESA; 16 U.S.C. 1531 *et seq.*) and in accordance with NMFS implementing regulations. Incidental take of listed species may be authorized under Section 10 and Section 7 of the ESA. In this instance, no directed take of listed marine mammals for scientific research purposes is requested, and the potential harassment of SSLs incidental to seabird and pinniped research is evaluated via ESA Section 7 consultation for NMFS proposed issuance of an IHA. Section 7 (50 CFR § 402.14(c)) of the Endangered Species Act of 1973 as amended (ESA; 16 U.S.C. 1531 *et seq.*) states that all Federal agencies shall, in consultation with and with the assistance of the Secretary of the Interior/Commerce (Secretary), ensure that any actions authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered species or threatened species, or result in the destruction or adverse modification of habitat of such species, which is determined by the Secretary to be critical.

In 2007, the NMFS Permits, Conservation, and Education Division (PR1) initiated a formal consultation with the NMFS Endangered Species Division (PR3) on the issuance of an IHA to take marine mammals by harassment incidental to PRBO's conduct of seabird research. In a 2007 Biological Opinion (BiOp) titled, "*NMFS Biological Opinion on Seabird Research on Southeast Farallon Island, Año Nuevo Island, and Point Reyes National Seashore to PRBO*," PR3 concluded that that PR1's issuance of an IHA to PRBO for seabird research was likely to affect, but not likely to jeopardize the continued existence of SSL. PR3 issued an incidental take statement (ITS) for 14 SSL pursuant to section 7 of the ESA. The ITS contained reasonable and prudent measures for implementing terms and conditions to minimize the effects of this take.

For the 2008 IHA application, the proposed pinniped research expands the scope of the previously analyzed action to include NMFS' proposed issuance of an IHA that would include incidental harassment of SSLs associated with PRBO's pinniped research activities. In August 2008, PR1 initiated a Section 7 consultation with PR3 under the ESA to make a determination whether the issuance of the IHA would likely jeopardize the continued existence of the eastern U.S. stock of SSL. On November 17, PR3 issued a BiOp for seabird and pinniped research in central California, and concluded that that PR1's issuance of an IHA to PRBO for seabird and pinniped research was likely to affect, but not likely to jeopardize the continued existence of SSL. PR3 issued an incidental take statement (ITS) for 20 SSL pursuant to section 7 of the ESA. The ITS contained reasonable and prudent measures for implementing terms and conditions to minimize the effects of this take.

1.3.3. National Environmental Policy Act (NEPA)

NEPA was enacted in 1969 and requires consideration of environmental issues in federal agency planning and decision making. The procedural provisions of NEPA are provided in 40 CFR Parts 1500-1508, outlining federal agency responsibilities under NEPA. NOAA has published procedures for implementing NEPA in NAO 216-6. This SEA/EA is prepared in accordance with NEPA, its implementing regulations, and NAO 216-6.

In 2007, NMFS prepared a draft EA titled, “*Environmental Assessment on the Issuance of an Incidental Harassment Authorization to PRBO Conservation Science to Take Marine Mammals by Harassment Incidental to Conducting Seabird Research in Central California*,” on the issuance of a one-year IHA to PRBO to take marine mammals by level B harassment incidental to conducting seabird research in central California. The draft EA was released for public review and comment (72 FR 41294, July 27, 2007). Comments were considered in the preparation of a Final EA. In addition, comments on the IHA itself were addressed in full in the *Federal Register* Notice of Issuance of an IHA for PRBO (72 FR 71121, December 14, 2007). At that time, NMFS determined that conducting the seabird research would not have a significant impact on the quality of the human environment and issued a Finding of No Significant Impact (FONSI).

SRPs are generally categorically excluded from the requirement to prepare an EA or an Environmental Impact Statement (EIS), since, as a class, they do not have a significant effect on the human environment unless extraordinary circumstances warrant preparation of an EA or EIS. In 2007, NMFS prepared a memorandum titled, “*Categorical Exclusion Memorandum regarding issuance of a Scientific Research Permit to Point Reyes Bird Observatory Conservation Science [File No. 373-1868]*,” that determined that the proposed research operations did not require an EA nor an EIS.

1.3.4. National Marine Sanctuaries Act (NMSA)

The Marine Protection, Research, and Sanctuaries Act (NMSA; 16 U.S.C. 1431 *et seq.*) authorizes the designation of National Marine Sanctuaries to protect significant waters and secure habitat for aquatic species, shelter historically significant shipwrecks and other cultural resources, and serve as valuable spots for research, fishing, wildlife viewing, boating, and tourism.

1.3.5. Record of Decision (ROD) on Steller Sea Lion Research

In 2005, NMFS announced its intent to prepare an EIS to analyze the environmental impacts of issuing grants and permits facilitating research on SSL and northern fur seals. In 2007, NMFS completed a Final Programmatic Environmental Impact Statement (PEIS) for SSL and northern fur seal research and signed a ROD which documented the Agency's decision to limit research permits to three years (June 15, 2007 to August 1, 2009) while engaging in a program review. Upon completion of the program review, NMFS would adopt policy and guidance to improve the implementation of the research program. Until such policy and guidance is adopted, NMFS will not process or accept any requests for amendments to current SRPs that would alter the potential take of SSLs or Northern Fur Seals.

1.4. PURPOSE AND NEED FOR THE PROPOSED ACTION

In response to the receipt of the application from PRBO, NMFS proposes to issue an IHA pursuant to the MMPA § 101(a)(5)(D). In addition, NMFS proposed to allow for the take of SSLs incidental to the continuance of previously permitted scientific marine mammal research. The purpose and need of the action is to ensure compliance with the MMPA (and its implementing regulations) and ESA for the activities associated with PRBO's proposed pinniped and seabird research.

In response to receipt of a request for incidental take authorization under MMPA for a one-year period beginning approximately December 12, 2008, NMFS' proposed action is issuance of an IHA for take of marine mammals by Level B behavioral harassment incidental to both the seabird and pinniped research activities.

Under the MMPA, IHAs shall be granted for a period not to exceed one year if the Secretary of Commerce finds that the taking will have a negligible impact on the species or stock(s); the taking will involve only small numbers of marine mammals; and will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses. In accordance with the MMPA, the IHAs must set forth the permissible methods of taking by harassment (see below), other means of effecting the least practicable impact on the species or stock and their habitat, and requirements pertaining to the monitoring and reporting of such taking. NMFS has defined "negligible impact" in 50 CFR 216.103 as "...an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival."

As part of NMFS' purpose and need to ensure compliance with the MMPA, the MMPA sets forth specific standards that must be met in order for an incidental take authorization to be issued. If these standards are not met, the authorization would be denied. Specifically, if the actions proposed for an IHA will result in no more than the incidental harassment of small numbers of marine mammals, have no more than a negligible impact on the species or stocks, will not have an unmitigable adverse impact on the availability of the species or stock for subsistence uses, and the permissible methods of taking and required monitoring are set forth, then NMFS shall issue the authorizations pursuant to MMPA, 16 USC 1371 (a)(5)(D).

In response to receipt of an application for marine mammal scientific research, NMFS previously issued a permit for research on marine mammals in the wild, pursuant to the Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. 1361 *et seq.*) and the regulations governing the taking and importing of marine mammals (50 CFR Part 216). The permit exempted PRBO's pinniped research from the MMPA's prohibition against "takes" of marine mammals during conduct of authorized research. The purpose of issuing research permits is to facilitate *bona fide* research on marine mammals, the results of which are likely to contribute to the basic knowledge of marine mammal biology or ecology or are likely to identify, evaluate, or resolve conservation problems. More detailed discussion on the purpose of the underlying PRBO research is provided in the CE memorandum (as described in Appendix A) for the 2007 action. Given that the previously issued permit now may involve the incidental harassment of an ESA-listed species, the need for NMFS action is to consider whether to authorize takes of SSLs to occur incidental to continuance of the research activities.

1.5. SCOPE, OBJECTIVE AND ASSUMPTIONS

The scope of the NEPA analysis has been expanded beyond that considered in the 2007 EA for issuance of an IHA for PRBO's proposed research on seabirds. The additional consideration of incidental harassment of an ESA-listed species associated with pinniped research represents a change in the proposed IHA action and a change in circumstance (i.e., potential for adverse effects to ESA-listed species) beyond the scope considered in the determination that a CE was applicable

for the 2007 pinniped research. Based on the need to access areas where SSL may be hauled out, PRBO and NMFS now believe that incidental takes of SSL may occur during pinniped research, and that the activities that may result in such take should not continue until the potential effects of harassment have been fully evaluated.

Therefore, the scope of this NEPA analysis is to serve as:

- (1) a supplement the 2007 EA to analyze the 2008 proposed issuance of an IHA to PRBO; and
- (3) an EA for SRP 373-1868-00 due to a change in circumstance relative to environmental consequences that may have an adverse effect upon endangered or threatened species, supplanting the original use of a CE for SRP 37-1868-00 pursuant to NAO 216-6 § 5.05(c) (Exceptions for Categorical Exclusions).

1.5.1. Analysis of the Scope of the 2007 EA for the 2008 Proposed Action.

The proposed activities associated with the 2008 seabird research operations are expected to have environmental impacts similar to activities analyzed in the 2007 EA titled, “*Environmental Assessment on the Issuance of an Incidental Harassment Authorization to PRBO Conservation Science to Take Marine Mammals by Harassment Incidental to Conducting Seabird Research in Central California.*” NMFS determined therefore that it would be appropriate to supplement the 2007 EA to support NMFS’ NEPA compliance for the 2008 proposed issuance of an IHA.

1.5.2. Analysis of the Scope of the 2007 CE for the 2008 Proposed Action.

The proposed activities associated with the 2008 pinniped research operations are expected to have environmental impacts beyond the scope of activities analyzed in the 2007 CE titled, “*Categorical Exclusion Memorandum regarding issuance of a Scientific Research Permit to Point Reyes Bird Observatory Conservation Science [File No. 373-1868].*” Due to a change in circumstance relevant to environmental consequences as described in Appendix A, this document serves as an EA for the authorization of SSL harassment incidental to the continuation of research on northern elephant seals by PRBO.

This SEA/EA also incorporates the 2007 CE by reference, however, this document replaces the environmental consequences specific to SSL as analyzed in that CE and as described in Appendix A with the determination that harassment of SSL may occur incidental to PRBO’s capture and handling activities on northern elephant seals and harbor seals.

NMFS reviewed the 2007 EA and the 2007 CE to determine which aspects warranted supplementation to meet the spirit and intent of NEPA. Detailed comparable analyses of the 2007 EA and the content of this SEA/EA are provided in Table 1 in Section 1.5.3.

1.5.3. Table 1. Comparison between the 2007 EA and 2008 SEA/EA.

2007 Sect.	Title	2007 EA for the Issuance of an IHA for Seabird Research	2008 Sect.	2008 SEA / EA for the Issuance of an IHA for Seabird and Pinniped Research
I	Introduction	Described PRBO's request for an IHA to incidentally harass small numbers of pinnipeds incidental to seabird research in the South Farallon Islands, Año Nuevo Island, and Point Reyes National Seashore in California.	1.0	Described the proposed actions to: (1) issue an IHA to PRBO to incidentally harass small numbers of pinnipeds incidental to seabird and pinniped research; and (2) to prepare the appropriate NEPA document for SRP 373-1868-00.
-	Background	N/A*	1.1	Summarized the current status of PRBO's seabird research program under a one-year IHA and the current status of their pinniped research operations under a five-year SRP (373-1868-00).
-	Public Comment Process	N/A	1.2	Discussed the <i>Federal Register</i> (73 FR 56556, September 29, 2008) notice and request for comments.
-	Statutory and Regulatory Framework	N/A	1.3	Described NMFS' statutory and regulatory mandates pursuant to the MMPA, ESA, NEPA, and 2007 ROD on Steller sea lion and northern fur seal research.
II	Purpose and Need for the Proposed Action	Detailed NMFS' compliance with MMPA and its implementing regulations in association with PRBO's seabird research activities. Described the proposed action to issue an IHA for seabird research in SFI, ANI, and PRNS in California.	1.4	Updated and supplemented this section to include a discussion of compliance with NEPA related to PRBO's seabird and pinniped research activities.
-	Scope, Objective and Assumptions	N/A	1.5	Discussed the analysis of the 2007 EA for seabird research and the analysis of the 2007 CE for SRP 373-1868-00. Detailed the assumptions used to develop the 2008 SEA/EA.
-	Description of the Proposed Action	N/A	1.6	Added this section to reflect that NMFS proposes two federal actions: (1) to issue one IHA for seabird and pinniped research; (2) to continue to allow permitted pinniped research under SRP 373-1868-00 for those components of the action that may incidentally harass SSLs.
III	Description of the Proposed Research Activities	Provided descriptions of the seabird research activities on SFI, ANI, and PRNS.	1.7	Incorporated by reference, from the 2007 EA, the descriptions of seabird research activities and field station resupply efforts on SFI, ANI, and PRNS. Supplemented this section to include a summary of pinniped research activities on WEI, SFB, and RR conducted under SRP 373-1868-00.

2007 Sect.	Title	2007 EA for the Issuance of an IHA for Seabird Research	2008 Sect.	2008 SEA/EA for the Issuance of an IHA for Seabird and Pinniped Research
IV	Description of the Alternatives	Evaluated three alternatives: (1) No Action; (2) Issuing an IHA with no mitigation measures; and (3) the Preferred Alternative of Issuing an IHA with mitigation measures.	2.0 2.1 2.2 2.3	The three alternatives were incorporated herein by reference. NMFS has modified each alternative to reflect the inclusion of pinniped research in the proposed IHA and the corresponding continuance of an SRP for those research activities.
V V.1 V.2	Existing Environment and Impact Analysis	Physical: Provided descriptions of the action areas of SFI, ANI, and PRNS. Biological: Affected marine mammal and seabird species were analyzed in detail.	3.0 3.1	Physical: Incorporated by reference, from the 2007 EA, the descriptions of SFI, ANI and PRNS. Supplemented this section to include descriptions of two additional action areas: SFB and RR. Biological: There are no changes. The 2007 EA and CE are incorporated herein, by reference.
VI VI.1 VI.2	Environmental Consequences	Physical: Seabird research would not significantly impact the physical environment. No negative impacts were expected. Biological: Concluded that the seabird research operations would result in temporary disturbances resulting from human presence. Number of Takes: NMFS estimated that 14 SSL could be potentially affected by level B behavioral harassment. The number of takes of non-listed pinnipeds under the 2007 IHA are: 2,422 California sea lions, 500 harbor seals, and 273 northern elephant seals. Socioeconomic and Cultural: Not addressed in the EA.	3.2	Physical: Updated the description to include pinniped research operations in SFB and RR. Condensed description of impacts provided in the 2007 EA. Biological: Updated to include the recent change in circumstance relative to disturbing SSL while conducting research on northern elephant seals on WEI and SFI under SRP 373-1868-00. Number of Takes: NMFS increased the estimate to 20 SSL, due to changes in the way PRBO researchers access the action area to conduct pinniped research under SRP 373-1868-00. The number of takes of non-listed pinnipeds analyzed for the proposed 2008 IHA are: 2,242 California sea lions, 418 harbor seals, and 253 northern elephant seals. The number of takes of non-listed pinnipeds under the existing SRP are unchanged from those analyzed in the 2007 CE memo. Socioeconomic and Cultural: Supplemented EA. No negative impacts were expected.
VIII.	Mitigation, Monitoring, and Reporting	Proposes mitigation measures to reduce incidental disturbance of marine mammals.	3.2.8 3.2.9 3.2.10	No changes from the 2007 EA. Mitigations specific to pinniped research activities are addressed in SRP 373-1686-00 (see Appendix B) and are incorporated by reference.
VI.3	Analysis of the Alternatives	Evaluated the two alternatives carried through for analysis.	3.3 3.4	Evaluated the two alternatives and provided an Alternatives Comparison Table.

2007 Sect.	Title	2007 EA for the Issuance of an IHA for Seabird Research	2008 Sect.	2008 SEA / EA for the Issuance of an IHA for Seabird and Pinniped Research
VI.4	Cumulative Effects	Cumulative impacts on subsistence harvest activities, commercial harvest activities, marine pollution, research related mortalities, prey abundance, disease, and natural mortality within SFI, ANI, and PRNS were analyzed in detail in the 2007 EA.	4.0	For the most part, there is no change in the cumulative impacts analysis and the 2007 EA is incorporated herein by reference.
IX	Compliance with ESA	Detailed Section 7 consultation and issuance of a BiOp.	5.0	Updated to reflect current Section 7 Consultation.
X	Compliance with Other Federal and State Regulations	Discussed PRBO's co-operative agreement with the U.S. Fish and Wildlife Service, and the National Park Service and the applicant's responsibilities for securing all permits needed to conduct seabird research in the area.	6.0	No changes from the 2007 EA.
XI	Conclusion	Concluded that the requirements of section 101(a)(5)(D) of the MMPA were met.	7.0	The SEA/EA arrived at the same conclusion as the 2007 EA regarding the incidental take authorization. Updated to reference the conclusions on the pinniped research activities.
XII	Recommendation	Determined that the issuance of the IHA would not significantly impact the quality of the human environment.	8.0	The SEA/EA arrived at the same conclusion as the 2007 EA– the issuance of the IHA would not significantly impact the quality of the human environment. Updated to include the conclusion for the pinniped research activities.
-	Figures and Maps	Included maps of the action area.	-	This document supplements the 2007 EA by including two additional action areas where pinniped research operations will take place under SRP 373-1868-00. The proposed action areas (SFB and RR) as described in the 2007 CE are incorporated herein, by reference. All maps and figures from the 2007 EA are incorporated herein, by reference.
-	Literature Cited	Included all literature used in the analysis for the 2007 EA.	9.0	This section updates the literature cited for the 2008 analysis. Also, literature cited in the 2007 EA and CE are incorporated herein, by reference.

*Note that "N/A" is used here to indicate that the specific section title was not included in the 2007 EA, although the content requirements were covered in other sections.

1.6. DESCRIPTION OF PROPOSED ACTIONS

1.6.1. Issue an IHA

The proposed action is the issuance of an IHA for the take of marine mammals by level B behavioral harassment incidental to PRBO's conduct of seabird and pinniped research on SFI, ANI, and PRNS. As part of NMFS' purpose and need to ensure compliance with MMPA, the MMPA sets forth specific standards (i.e., unmitigable adverse impact and negligible impact) that must be met in order for NMFS to issue an IHA. If these standards are not met, NMFS would deny the authorization. Conversely, if the proposed action will have no more than a negligible impact on the species or stocks; will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses; and set forth permissible mitigation measures monitoring, then NMFS shall issue the authorization. A related second proposed action is the authorization of harassment of SSLs incidental to the continuance of pinniped scientific research under the MMPA, provided the required MMPA findings for issuance of an IHA for such harassment can be issued.

1.7. DESCRIPTION OF THE PROPOSED RESEARCH ACTIVITIES

A general overview of seabird research activities was provided in the 2007 EA and the 2007 CE. A description of the proposed research activities for the 2008 IHA is presented here:

Seabird Research on Southeast Farallon Island (SEFI), ANI, and PRNS

Seabird research activities involve monitoring seabird burrow nesting habitat quality and habitat restoration between the seabird breeding season and the elephant seal pupping season. PRBO will also conduct observational and marking (i.e., netting and banding for capture-mark-recapture) studies of breeding seabirds. All work is conducted by PRBO in collaboration with Oikonos - Ecosystem Knowledge (Oikonos) through a collaborative agreement with California State Parks.

There are no changes in the seabird research activities performed under the 2007 IHA; thus, the summary of seabird research from the 2007 EA is incorporated herein by reference.

Field Station Resupply on SEFI

PRBO will resupply the field station once every two weeks for a maximum of 26 visits per year. These visits will last one to three hours and involve launching of the boat with one operator along with two to four researchers assisting with the operations from land.

There are no changes in the field station resupply activities performed under the 2007 IHA; thus, the summary of resupply activities from the 2007 EA is incorporated herein by reference.

Pinniped Research on West End Island (WEI)

Research activities on pinnipeds in California has been ongoing for over 30 years as part of integrated research and monitoring efforts of PRBO, the National Park Service, U.S. Fish and Wildlife Service, and other agencies and researchers. Pinniped research activities involve the capture and handling of northern elephant seals in order to dye-mark, attach flipper tags and scientific instruments, and collect tissue samples. PRBO conducts the activities between early

December and late February. There are approximately five surveys per year, each lasting approximately two hours.

Pinniped Research in San Francisco Bay (SFB) and Russian River (RR)

The 2007 IHA only authorized seabird research activities conducted on SFI, ANI, and PRNS. As such, the 2007 EA for seabird research activities did not include information on pinniped research activities conducted in SFB and the RR under SRP 373-1868-00. Thus, the summary of pinniped research from the 2007 CE is incorporated herein by reference.

Research and monitoring activities conducted under SRP 373-1868-00 would include: (1) capture and handling of harbor seals and northern elephant seals in order to dye-mark, attach flipper tags and scientific instruments, and collect tissue samples, (2) surveys and photo-documentation of all species in order to quantify numbers by sex and age class annually and seasonally, and (3) incidental Level B disturbances related to research activities. In accordance with the SRP, an estimated maximum of 300 harbor seals and 3,050 elephant seals will be captured or handled per year over a five year period, and an estimated 300 elephant seals, 5,150 harbor seals, 600 California sea lions, and five northern fur seals would be incidentally disturbed during pinniped research operations. In addition, an estimated 6 SSLs would be incidentally harassed during research activities and those harassments would be allowable during the northern elephant seal research operations only if authorized under the proposed IHA.

2. DESCRIPTION OF THE ALTERNATIVES

The alternatives considered for the seabird research are listed here and were previously described and analyzed in the 2007 EA, and are hereby incorporated by reference. However, NMFS has modified each alternative to reflect the addition of pinniped research as appropriate for the preparation of an EA for SRP 373-1868-00.

2.1. ALTERNATIVE 1 – NO ACTION ALTERNATIVE

Under the No Action Alternative, NMFS would not issue the IHA. The MMPA prohibits all takings of marine mammals unless authorized by a permit or exemption under the MMPA. If authorization to incidentally take Pacific harbor seals, California sea lions, northern elephant seals, and SSL is denied, PRBO could choose to avoid harassing marine mammals altogether or forego the proposed research project entirely if incidental harassment could not be avoided.

The MMPA allows for the issuance of permits to take marine mammals for the purpose of scientific research. If NMFS denies the issuance of an IHA to PRBO, then the research activities conducted under SRP-373-1868-00 would remain categorically excluded from environmental impact review, provided that PRBO continues to conduct those activities in a manner that avoids any incidental harassment of SSLs associated with pinniped research; given the presence of hauled-out SSLs, it is expected that not all of the planned research activities could be conducted if incidental harassment of SSLs is precluded.

2.2. ALTERNATIVE 2 – CONDUCT RESEARCH WITHOUT MARINE MAMMAL MITIGATION (ALTERNATIVE CONSIDERED, BUT NOT FURTHER ANALYZED)

Under this Alternative, NMFS would issue the IHA but not require the applicant to implement the mitigation and monitoring measures described in Section 3.2.8. However, because the MMPA requires holders of IHAs to reduce impacts on marine mammals to the lowest level practicable, if NMFS were to implement this alternative, the agency would not be in compliance with the MMPA.

This alternative is not considered to be within the reasonable range of alternatives for NMFS because issuance of an IHA without considering mitigation and monitoring would not be compliant with the MMPA and would not satisfy the purpose and need of the action. Accordingly, this alternative will not be analyzed in any greater detail because it fails to meet the statutory and regulatory requirements of the MMPA.

2.3. ALTERNATIVE 3 – PROPOSED ACTION – ISSUANCE INCIDENTAL TAKE AUTHORIZATION WITH MITIGATION

Under the proposed action, NMFS would issue a one-year IHA to PRBO allowing the incidental take by Level B behavioral harassment of a small number of Pacific harbor seals, California sea lions, northern elephant seals, and SSL during seabird and pinniped research operations on SFI, ANI, and PRNS. The mitigation measures and reporting requirements described in Section 3.2.8., which include keeping hushed voices and low bodies in visual presence of pinnipeds, and coordinating among researchers to reduce site visits and potential takes, will be incorporated into the IHA. The pinniped research activities authorized under SRP 373-1868-00 would continue as planned provided there is an IHA for incidental take of SSLs.

3. EXISTING ENVIRONMENT AND IMPACT ANALYSIS

3.1. AFFECTED ENVIRONMENT

The physical and biological environment of SFI, ANI, and PRNS, including its physical oceanography, marine birds, marine mammals, are described in the 2007 EA and are incorporated herein, for reference purposes. For purposes of this analysis, updated information is available on socioeconomic resources and cultural resources to supplement the description of the affected environment in the 2007 EA.

3.1.1. Physical Environment

The action areas where the proposed seabird research operations will take place are identical to those locations described in the 2007 EA and the 2007 CE memo. This conclusion is based on NMFS' review of the most recent scientific literature concerning the physical environment of the proposed action areas and the 2007 EA. Therefore, the descriptions of the affected physical environment of the proposed action areas (SFI, ANI, and PRNS) are incorporated as described in the 2007 EA.

This document supplements the 2007 EA by including two additional action areas where pinniped research operations will take place under SRP 373-1868-00. The proposed action areas (SFB and RR) as described in the 2007 CE memo (Appendix A) are incorporated herein, by reference.

San Francisco Bay

The main part of San Francisco Bay measures approximately 3 to 12 miles (5 to 20 km) wide east-to-west and between 48 miles (77 km) and 60 miles (97 km) north-to-south. Despite its value as a waterway and harbor, the many thousands of acres (several km²) of marshy wetlands forming the edges of the bay were considered for many years to be wasted space. As a result, soil excavated for building projects or dredged from channels was often dumped onto the wetlands and into other parts of the bay as landfill. From the mid-1800s through the late 1900s, more than a third of the original bay was filled and often built on, including tens of thousands of acres of salt marsh being converted into commercial salt ponds. Today, nearly 85% of the Bay's original salt marshes and shorelines have been altered.

Russian River

The Russian River coastline stretches for approximately 55 miles just south of San Francisco. Starting at Lake Mendocino, the Russian River flows south through valleys in Mendocino and Sonoma County, and empties into the Pacific Ocean at Jenner, California. The river provides drinking water to some towns and cities in Sonoma County, and also acts as a drainage channel for much of the basin. Its banks are lined with vineyards throughout much of Sonoma County.

3.1.2. Biological Resources

The marine mammal and seabird species that occur in the three action areas are identical to the marine mammal and seabird species analyzed in the 2007 EA and the marine mammal species analyzed in the 2007 CE. In addition, the marine mammal and seabird species that occur in the SFB and RR are the same as those analyzed in the 2007 EA and the 2007 CE memo. Therefore, the descriptions of the affected biological environment as detailed in the 2007 EA (NMFS, 2007) and as discussed in the 2007 CE for SRP 373-1868 are incorporated herein, by reference.

3.1.3. Socioeconomic Resources

Since there did not seem to be any potential to affect socioeconomic resources, neither the 2007 EA nor the 2007 CE memo addressed socioeconomic resources within the action areas of SFB, RR, SFI, ANI, and PRNS. Human activities are highest within the RR and SFB region. These activities include commercial fishing and recreational and tourist activities such as boating and kayaking. However, the proposed research areas are located in conservation areas which are relatively protected from harvesting and development. Socioeconomic benefits mainly arise from the work of research activities conducted by PRBO and its collaborators.

3.1.4. Cultural Resources

The PRNS is responsible for preserving nearly 300 historic structures, of which 60 are listed on the National Register of Historic Places including the Pierce Point Ranch and the Point Reyes Light Station. The PRNS has also identified twelve historic cultural landscapes within its boundaries and the north district of Golden Gate National Recreation Area.

3.2. ENVIRONMENTAL CONSEQUENCES

The impact of federal actions must be considered prior to implementation to determine whether the action will significantly affect the quality of the human environment. In this section, an analysis of the environmental impacts of issuing an IHA to PRBO and continuing research activities under SRP 373-1868-00 and the alternatives for the two proposed actions are presented.

3.2.1. Impacts on Physical Environment

Seabird research activities on SEFI involves one or two observers who access the island's two landings, the North Landing and the East Landing, by 14 to 18 feet (ft) (4.3 to 5.5 meter (m)) open motorboats which are hoisted onto the island using a derrick system. Researchers would visit the sites approximately one to three times per day for a maximum of 1080 visits per year. Most visits to these areas are brief (approximately 15 minutes). From early April through early August, seabird observers are present from two to five hours daily at North Landing to conduct observational studies. However, most intertidal areas of the island, where marine mammals are present, are rarely visited in seabird research. In both locations (North Landing and East Landing) the observers are located greater than 50 ft (15.2 m) above any pinnipeds—primarily California sea lions or northern elephant seals and to a lesser extent harbor seals—which may be hauled out. NMFS does not anticipate that the use of the open motorboat, use of the derrick system, or pedestrian traffic on land would physically alter the marine environment or negatively impact the physical environment on SEFI.

Seabird research activities on ANI involve two to three researchers who may access the island by a 12 ft (3.7 m) Zodiac boat to conduct research once a week April through August; restoration and monitoring from September-November; and intermittent visits during the rest of the year. Landings and visits to the nest boxes are brief in duration (approximately 15 minutes), and the maximum number of visits to the island would be 30 per year. NMFS does not anticipate that the use of the Zodiac or pedestrian traffic on land would physically alter the marine environment or negatively impact the physical environment on ANI.

Seabird monitoring on PRNS involves one or two observers conducting the survey by small boats (12 to 22 ft) along the PRNS shoreline. Observers will visit the site year round, with an emphasis during the seabird nesting season with occasional, intermittent visits the rest of the year. The maximum number of visits per year to the PRNS is 18. NMFS does not anticipate that the use of small boats nor the small amount of pedestrian traffic on land would physically alter the marine environment or negatively impact the physical environment on PRNS.

Pinniped surveys on WEI involve three observers transiting by foot approximately 1500 ft (457.2 m) above pinniped colonies to census northern elephant seal areas. There are approximately five pinniped surveys per year, each lasting approximately two hours. Any pedestrian transit above eastern Steller sea lion haulout areas will last approximately 30 minutes in duration. NMFS does not anticipate that the small amount of pedestrian traffic on land would physically alter the marine environment or negatively impact the physical environment on SEFI.

Therefore, the proposed seabird and pinniped research operations would not result in the physical altering of marine mammal habitat. Marine mammal habitat will not be affected by the proposed

action. Critical habitat for Eastern SSL around SFI and ANI, extends from two rookeries to 3,000 feet offshore (NMFS, 2006). Since the proposed seabird and pinniped research operations will not occur near the two rookeries nor impact any habitat on SFI or ANI, they will have no effect on designated critical habitat.

3.2.2. Impacts on Biological Environment

The proposed action is to allow for incidental takes of pinnipeds by disturbance (level B behavioral harassment) only incidental to the conduct of seabird research and pinniped research. The activities authorized in the current IHA have not changed. Specific to pinniped research, the directed take and incidental harassment of pinnipeds would not change from the existing SRP, except that all of the activities cannot reasonably continue to be conducted in a manner that avoids any harassment of SSLs. Therefore, the impacts on the biological environment associated with the continuance of pinniped scientific research activities would change, in that a small number of SSLs may be incidentally harassed during the research activities. Issuance of the IHA is not expected to result in substantial impacts to biodiversity or ecosystem function. The impacts would be related to incidental harassment of a limited number of marine mammals.

3.2.3. Impacts on Marine Mammal Species

The proposed seabird research operations could result in temporary disturbances by California sea lions, northern elephant seals, Pacific harbor seals, and SSL that are hauled out due to the appearance of researchers nearby. During pinniped and seabird research activities, every effort would be made to avoid incidental disturbance of SSL. However, in some cases, disturbance of SSL is not completely avoidable, for example, during the capture and handling of elephant seals (under SRP 373-1868) because these animals may be present at any given haul-out site on SFI, particularly WEI and the North Landing on SEFI.

On WEI, there is a potential to incidentally harass SSL while transiting the northern elephant seal rookeries. Historically, SSL hauled out on WEI are neither in nor near the transit path to the rookery. However, researchers have noted that a few SSL may be hauled out away from the northern elephant seals on a spit of rocks. Most often, the SSL present on the spit rarely respond to the presence of the researchers walking on the transit path, but sometimes a few may move away and sometimes enter the water.

With respect to conducting pinniped research on SEFI, researchers must access the island via two ingress points: the East and North Landing sites. The East Landing is the preferred point of ingress to the SEFI; however, inclement weather may preclude researchers from landing at this site which, historically, has had no SSL on site. As a safety precaution, the researchers must then access SEFI at the North Landing site which may have a few juvenile SSL hauled out near the point of ingress.

The 2007 EA and the 2007 CE include a review of the most recent scientific literature concerning impacts to marine mammals. Based on those documents and the review conducted to ensure that this SEA/EA would appropriately analyze the proposed action, the descriptions of impacts to pinnipeds and seabirds as described in the 2007 EA; and impacts to pinnipeds as described in the 2007 CE for SRP 373-1868 are incorporated herein, by reference. In summary, both documents

analyzed the effect of human presence and research activities on pinniped behavior. It is unlikely that disturbances by human presence would lead to Level A harassment (injury) and mortality. In addition, very few breeding animals will be disturbed as the researchers plan to avoid most locations where breeding occurs.

3.2.4. Number of Marine Mammals Expected to Be Taken

It is expected that approximately 2,242 California sea lions, 418 harbor seals, 253 northern elephant seals, and 20 Steller sea lions could be potentially affected by Level B harassment. This estimate is based on previous research experiences, with the same activities conducted in the proposed research area, and on marine mammal research activities in these areas. These incidental harassment take numbers represent approximately one percent of the U.S. stock of California sea lion, 1.2 percent of the California stock of Pacific harbor seal, less than one percent of the California breeding stock of northern elephant seal, and 0.04 percent of the eastern U.S. stock of Steller sea lion. All of the potential takes are expected to be Level B behavioral harassment only. No injury or mortality to pinnipeds is expected or requested. These activities and disturbances are not in breeding areas for marine mammals and reproductive animals will likely not be affected.

Therefore, NMFS concludes that only small numbers of these pinnipeds hauled out in the project vicinity would be potentially taken by Level B behavioral harassment incidental to the proposed research operations. In addition, proposed mitigation measures discussed below would greatly reduce the potential takes of marine mammals due to the proposed research activities. Consequently, NMFS determines that there is a negligible impact to marine mammals as a result of the proposed seabird and pinniped research activities.

3.2.5. Impacts on Seabird Species

Impacts from the proposed seabird research activities to seabird populations within the proposed action area are similar to those to pinnipeds, which are mainly due to the appearance of researchers nearby. Nonetheless, such impacts are expected to be negligible due to the small area and brief duration of the disturbances.

3.2.6. Impacts on Socioeconomic Resources

There are no social or economic impacts directly related to physical impacts of activities that would result from issuance of the IHA or preparation of the SEA/EA. Human activities are highest within the RR and SFB region. These activities include commercial fishing and recreational and tourist activities such as boating and kayaking. The presence and effects of researchers in the action area are considered to be negligible when compared to other human activities in the area.

Issuance of the IHA (the proposed action) would not result in inequitable distributions of environmental burdens or access to environmental goods. Furthermore, NMFS has determined that issuance of the 2008 IHA will not adversely affect low-income or minority populations.

3.2.7. Impacts on Cultural Resources

The potential for loss or destruction of cultural or historic resources is likely equal among the alternatives, and probably negligible given the nature of the seabird and pinniped research proposed under the IHA and pinniped research conducted under SRP 373-1868-00. NMFS does not anticipate that the small amount of pedestrian traffic on land would negatively impact any cultural resources within the action area.

3.2.8. Mitigation

PRBO researchers would apply the best available measures to reduce marine mammal disturbance. To reduce the potential for disturbance from visual and acoustic stimuli associated with these activities, the proposed IHA contains the following mitigation measures:

- (1) Researchers will abide by the Terms and Conditions of the Biological Opinion Incidental Take Statement.
- (2) Researchers will abide by the Terms and Conditions of SRP 373-1868-00.
- (3) Plan to minimize the potential for disturbance (to the lowest level practicable near known pinniped haul-outs by boat travel and pedestrian approach during pinniped and seabird research operations.
- (4) To the extent possible, be careful in the route of approach during beach landings. Beach landings on Año Nuevo Island would only occur after any pinnipeds that might be present on the landing beach have entered the water.
- (5) Select a pathway of approach to research sites that minimizes the number of marine mammals harassed, with the first priority being avoiding the disturbance of Steller sea lions at haul-outs.
- (6) Researchers should monitor for offshore predators and not approach hauled out Stellar sea lions if great white sharks or killer whales are seen in the area. If predators are seen, Eastern Steller sea lions must not be disturbed until the area is free of predators.
- (7) Keep voices hushed and bodies low in the visual presence of pinnipeds.
- (8) Conduct seabird observations at North Landing on Southeast Farallon Island within an observation blind to remain shielded from the view of hauled out pinnipeds.
- (9) Crawl slowly towards seabird nesting boxes on Año Nuevo Island if pinnipeds are within the researchers' field of vision.
- (10) Coordinate visits for seabird and pinniped research to intertidal areas of Southeast Farallon Island to reduce potential take.
- (11) Coordinate all research goals on Año Nuevo Island to minimize the number of trips to the island. Once on Año Nuevo Island, researchers would coordinate monitoring schedules so that areas near any pinnipeds would be accessed only once per visit.
- (12) The lead biologist will serve as an observer to evaluate incidental take and halt any research activities should the potential for incidental take be too great.

3.2.9. Monitoring

PRBO researchers are required to:

- (1) Record the date, time, and location (or closest point of ingress) of each visit.
- (2) Record marine mammal behavior patterns observed before, during, and after the activities.
- (3) Record the number of Steller sea lions present at each location.
- (4) If applicable, note the presence of any offshore predators (date, time, number, species).

3.2.10. Reporting

PRBO researchers are required to:

- (1) Report observations of unusual behaviors of pinnipeds in the action area to NMFS so that any potential follow-up observations can be conducted by the appropriate personnel.
- (2) Submit a draft final report to NMFS within 90 days after the expiration of the IHA.
- (3) Submit a final report to NMFS within 30 days after receiving comments from NMFS on the draft final report.

3.3. ANALYSIS OF ALTERNATIVE 1 (NO ACTION ALTERNATIVE)

Seabird research likely could not be conducted without an IHA for the unintentional harassment of pinnipeds that are present in the seabird research vicinity. If PRBO does not conduct seabird research operations on SFI, ANI, and PRNS in central California, they would be unable to collect critical information on seabirds and pinnipeds for conservation and management. This alternative would also eliminate any potential disturbance to SSL from the proposed pinniped research activities conducted under SRP 373-1868-00 on SFI. However, restricting research to areas where SSL are not likely to be present in some cases would prevent the opportunity for researchers to collect data (e.g., retrieving satellite tags) that would ensure their research could be completed and published and which could provide information to NMFS that may be used to implement NMFS or other agency management activities. If an IHA were not issued, it is expected that some activities under SSRP 373-1868-00 would continue, but the relatively less pinniped research would occur due to the need to avoid incidental harassment of SSLs. Under the no action, directed take of pinnipeds for research purposes and incidental harassment of non-target pinnipeds would be expected to occur at a lower level than currently permitted under the SRP. .

3.4. ANALYSIS OF ALTERNATIVE 3 (PROPOSED ACTION)

Under the proposed action, NMFS would issue an IHA to PRBO to take marine mammals incidental to seabird and pinniped research within the proposed project areas, provided that mitigation measures described in Section 3.2.8 must be implemented to reduce potential impacts to marine mammals. This alternative would allow some Level B behavioral harassment to marine mammals. With the implementation of the required monitoring, mitigation, and reporting measures described in Sections 3.2.8 to 3.2.10, the potential impacts to marine mammals are

believed to be negligible and short-term, and no Level A harassment (injury) or mortality to marine mammals is expected.

3.5. TABLE 2. ALTERNATIVES COMPARISON TABLE.

Resource	Alternative I No Action	Alternative III Preferred Alternative with Required Mitigation and Monitoring
Physical	No impacts.	The proposed seabird and pinniped research operations would only add limited pedestrian traffic to the proposed research areas. Transiting the islands will not physically alter marine mammal habitat and will not negatively impact designated critical habitat for SSL.
Marine Mammals	No impacts from seabird research, as the research would unlikely be able to continue without an IHA. Impacts to pinnipeds from the pinniped research would continue, except that the number of direct and incidental takes would be expected to be lower, as certain research likely would not be conducted due to the need to avoid harassment of SSLs.	With the implementation of required monitoring and mitigation measures detailed in Section 3.2.8, the potential impacts to marine mammals are expected to be minimal, predominantly related to short-term stress, disturbance, and temporary displacement of pinnipeds. No Level A harassment (injury) or mortality to marine mammals is expected. The cumulative impacts from the proposed seabird and pinniped research are not expected to impact stock populations. Both the IHA and the SRP contain mitigating measures to minimize cumulative effects and to avoid unnecessary stress to the subject animals.
Seabirds	No impacts from seabird research, as the research would unlikely be able to continue without an IHA. NMFS does not anticipate impacts to seabirds associated with pinniped research, but minimal brief disturbance may occur if some of the pinniped research could continue without harassment of SSLs.	The potential impacts to seabirds are expected to be negligible due to the small area and brief duration of the disturbances.
Socioeconomic/ Cultural	No impacts.	No adverse effect or significant impact on either resource.

4. CUMULATIVE EFFECTS

Cumulative effects are defined as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions” (40 CFR § 1508.7).

Cumulative impacts of subsistence harvest activities outside the action area, commercial harvest (e.g, fish) activities, marine pollution, research related mortalities, prey abundance, disease, and

natural mortality within SFI, ANI, and PRNS were analyzed in detail in the 2007 EA. Cumulative impacts of existing permits or authorizations that allow for takes of pinnipeds in California were analyzed in detail in the 2007 CE. The action areas where the proposed seabird and pinniped research operations would be conducted are within those that were analyzed in the 2007 EA and 2007 CE respectively. Therefore, the cumulative impact analyses from the 2007 EA and the 2007 CE are incorporated by reference herein, and have been supplemented to account for more recent activities in central California.

The proposed research areas are located in a marine sanctuary, wildlife refuges, a National Park, and other conservation areas, which are relatively protected from human disturbances from harvesting and development. The research activities would only add limited pedestrian traffic to the proposed research areas and are well planned to minimize any impacts to the biological and physical environment of the areas by implementing mitigation protocols.

Current human activities within the proposed action area are limited due to the numerous marine sanctuaries, refuges, and parks that are designated within the action area. Human activities are highest within the RR and SFB areas. These activities include commercial fishing and recreational and tourist activities such as boating and kayaking. The presence and effects of researchers in the action area are considered to be negligible when compared to other human activities in the area.

Therefore, NMFS has determined that the proposed research activities would not have a significant cumulative effect on the human environment. In addition, NMFS has determined that the proposed action would not likely to have significant cumulative effects on Pacific harbor seals, California sea lions, and northern elephant seals, particularly as the action does not result in removal of any animals from the population and current population status of these species is either stable or is close to carrying capacity. With regard to SSLs, harassment incidents would be temporary and would not remove any animals from the population, therefore the proposed action, when considered in the context of other research and activities that affect SSLs, would not have cumulatively significant impacts.

5. COMPLIANCE WITH THE ENDANGERED SPECIES ACT

A section 7 consultation under the ESA was conducted with NMFS Headquarters Office of Protected Resources' Endangered Species Division to make a determination whether the proposed action would cause jeopardy to the eastern U.S. stock of SSL and adversely affect the survival of the existence of this population. On November 18, 2008, NMFS issued a BiOp and concluded that the issuance of an IHA to PRBO is likely to affect, but not likely to jeopardize the continued existence of SSL. All reasonable and prudent measures and terms and conditions required by the 2008 BiOp will be incorporated into the IHA and implemented as part of the proposed action. An incidental take statement is included in the BiOp.

9. LITERATURE

Note: This document incorporates by reference, herein, all literature cited in the 2007 EA and the 2007 CE.

National Marine Fisheries Service. 2006. Draft Steller Sea Lion Recovery Plan: Eastern and Western Population Segments (*Eumetopias jubatus*). Steller Sea Lion Recovery Team. Prepared for NOAA/NMFS/Office of Protected Resources. Silver Spring, Maryland. 285 pp.

National Marine Fisheries Service. 2007. Environmental Assessment on the issuance of an incidental harassment authorization to PRBO Conservation Science to take marine mammals by harassment incidental to conducting seabird research in central California. National Marine Fisheries Service, 26 pp.

National Marine Fisheries Service. 2007. Record of Decision (ROD) for the Steller sea lion and northern fur seal research final programmatic Environmental Impact Statement. National Oceanographic and Atmospheric Administration. National Marine Fisheries Service. Silver Spring, Maryland. 12 pp.

APPENDIX A – CATEGORICAL EXCLUSION MEMORANDUM

MEMORANDUM FOR: The File No. 373-1868

FROM: F/PR1 – P. Michael Payne

SUBJECT: Categorical Exclusion Memorandum regarding issuance of a Scientific Research Permit to Point Reyes Bird Observatory Conservation Science [File No. 373-1868]

Proposed Action: The Permits, Conservation and Education Division proposes to issue a scientific research permit to Point Reyes Bird Observatory (PRBO) Conservation Science (Dr. William J. Sydeman, Responsible Party), 3820 Cypress Drive, # 11, Petaluma, CA 94954, pursuant to the Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. 1361 *et seq.*), and the Regulations Governing the Taking and Importing of Marine Mammals (50 CFR part 216).

Program Description: Section 104 of the MMPA allows for issuance of permits and amendments to permits to take marine mammals for the purposes of scientific research. These permits must specify the number and species of animals that can be taken, and designate the manner, period, and locations in which the takes may occur. The regulations promulgated at 50 CFR §216 specify criteria to be considered by the Office Director in reviewing applications and making a decision regarding issuance of a permit or an amendment to a permit. Specifically, §216.33(c) requires that the Office Director make an initial determination under the National Environmental Policy Act of 1969 (NEPA; 42 U.S.C. 4321 *et seq.*) as to whether the proposed activity is categorically excluded from further environmental impact review or the preparation of an environmental assessment (EA) or environmental impact statement (EIS) is necessary; and prepare any required EA or EIS if an initial determination is made that the activity proposed is not categorically excluded from such further review. Scientific research permits are generally categorically excluded from the requirement to prepare an EA or EIS since, as a class, they do not have a significant effect on the human environment (NOAA Administrative Order Series 216-6, May 20, 1999).

Description of Action: The PRBO proposes to study and monitor population trends, health, and ecology of pinnipeds in California. Harbor seals (*Phoca vitulina richardsi*) and northern elephant seals (*Mirounga angustirostris*) are the primary species of study; researchers would also remotely survey California sea lions (*Zalophus californianus*), Steller sea lions (*Eumetopias jubatus*), and northern fur seals (*Callorhinus ursinus*) and their responses to changes in the environment. Steller sea lions would not be disturbed or harassed during these surveys as the researchers will use spotting scopes or binoculars to count animals from a distance. Data gathered from monitoring these species would be provided to managers to alert them to changes in the condition of pinniped populations and of the coastal marine ecosystems of central California.

Research and monitoring activities would include (1) capture and handling of harbor seals and northern elephant seals in order to dye-mark, attach flipper tags and scientific instruments, and collect tissue samples, (2) surveys and photo-documentation of all species in order to quantify numbers by sex and age class annually and seasonally, and (3) incidental Level B disturbances related to research activities. An estimated maximum of 300 harbor seals and 3,050 elephant seals will be captured or handled per year over a five year period, and an estimated 300 elephant seals,

5,150 harbor seals, 600 California sea lions, and five northern fur seals would be incidentally disturbed during pinniped research operations. No takes of Steller sea lions are anticipated to occur and would not be authorized. Tables specifying requested takes are attached. Details of methods and purposes for activities proposed are provided in the permit application on file in the Permits, Conservation and Education Division, Office of Protected Resources.

The action area is within central California and includes the Marin County coastline of the Point Reyes Peninsula (PR), the South Farallon Islands (SFI: Southeast Farallon Island and West Island) west of San Francisco, San Francisco Bay (SFB), and the Russian River (RR) in Sonoma County. Northern elephant seals will be studied at PR, SFI, and the RR. Harbor seals would be studied at all locations. Remote observations of Steller and California sea lions would be conducted at PR and SFI while northern fur seals will be remotely studied at SFI. When areas of research are also being used by other scientists, PRBO would contact those researchers and coordinate research efforts.

Research activities on pinnipeds in California has been ongoing for over 30 years as part of integrated research and monitoring efforts of the National Park Service (Point Reyes National Seashore), U.S. Fish and Wildlife Service (Farallon National Wildlife Refuge), and other agencies and researchers. Researchers propose to start research upon issuance of the permit and the permit would expire 5 years thereafter. Researchers are currently operating as Co-investigators under Permit No. 87-1743 issued to Dr. Daniel P. Costa, Long Marine Laboratory of the University of California Santa Cruz, for conducting elephant seal research.

Environmental Consequences: The proposed permit would directly affect the following marine mammal species as they are the subjects of the research: northern elephant seal; Pacific harbor seal; California sea lion; and northern fur seal. While Steller sea lions would be monitored remotely, no takes of Steller sea lions have been requested. Details on the distribution, abundance, productivity and annual human-caused mortality for stocks of these species' located within the proposed action area can be found in the U.S. Pacific Marine Mammal Stock Assessment Reports, which are available in PDF from the National Marine Fisheries Service (NMFS) website (<http://www.nmfs.noaa.gov/pr/>). Below is a brief description on status of the stocks including minimum population estimates, potential biological removal (PBR) levels, and current threats facing each species.

Northern Elephant Seal

The northern elephant seal is not listed as depleted under the MMPA or as endangered or threatened under the Endangered Species Act (ESA). The northern elephant seal was exploited for its oil during the 18th and 19th centuries and by 1900 the population was reduced to 20-30 individuals on Guadalupe Island and as a result, genetic diversity is extremely low (Hoelzel et al. 1993, Hoelzel 1999). Although movement and genetic exchange occurs among colonies, most seals return to their natal site to breed (Huber et al. 1991).

There are 13 major breeding colonies of northern elephant seals distributed from Baja California, Mexico to the Point Reyes Peninsula in northern California. In the last three decades, annual pup production has increased at the rate of 9% per year in California and 5% per year over the entire range (Barlow et al. 1993). Based on pupping estimates, the California stock was approximately 101,000 in 2001 with a minimum population size estimated conservatively as 60,547 individuals

in 2002. Based on this estimate, the current PBR level for this stock is calculated to be 2,513 (Carretta et al. 2005).

Current anthropogenic threats to the species include entanglement in plastics and fisheries bycatch; however, the number of elephant seals caught in nets in north Pacific fisheries is considered to be trivial. Other mortality examples include boat collision and shootings (Carretta et al. 2002).

Pacific Harbor Seal

Harbor seals are not listed as endangered or threatened under the ESA or as depleted under the MMPA. Harbor seals are distributed widely throughout the Atlantic and Pacific Oceans with three recognized stocks (California, Oregon and Washington Coast, and Inland Washington) on the west coast of the U.S. Harbor seal populations in the Eastern North Pacific along the West Coast of the U.S. are all increasing. The most recent population estimate for California based on mark-recapture analysis is 43,449 based on a correction factor of 1.65 (Lowry et al. 2005), with a minimum size of the California harbor seal population of 31,600 (Carretta et al. 2005). The PBR level for this stock is calculated to be 1,896 individuals.

Anthropogenic threats include individuals killed incidental to fishing activities (Barlow et al. 1997). There have been two mass mortality events of harbor seals at Point Reyes; around 90 seals stranded in 1997 and around 25 stranded in 2000. The causes for these mortality events appeared to be related to a previously undescribed virus (F. Gulland, pers. com.).

California Sea Lion

California sea lions are not listed as endangered or threatened under the Endangered Species Act or as depleted under the MMPA. Commercial harvest of the species in southern California and Mexico reduced the population to approximately 1,500 individuals by the 1920s. Since the passage of the MMPA in 1972, the California sea lion population has steadily increased along the West Coast of the U.S. (Carretta et al. 2002). They range from southern Mexico to British Columbia and breed almost entirely on islands in southern California, Western Baja California, and the Gulf of California; however, recently they have been breeding annually in small numbers at Año Nuevo Island and South Farallon Island, California. The California sea lion has the largest population of any sea lion species and is the only sea lion whose population is showing a healthy growth rate of 5% to 6.2% per annum. Annual incidental takes in fisheries is approximately 915 individuals; however, the population is growing by 8.2% per year and fishing mortality is declining (Barlow et al. 1995). Current population estimates range from 237,000 and 244,000 with a minimum population estimate of 138,881 (Carretta et al. 2003), and an additional 44,000 to 53,000 animals in Mexico (Aurioles-Gamboa and Zavala-Gonzalez 1994). The PBR level for this stock is calculated to be 8,333 sea lions per year.

Current causes for mortality in California include incidental mortality in drift and set gillnet fisheries and in groundfish trawl fisheries at sea. Annual estimated mortality of sea lions in California for the set gillnet fishery was 1,194 in 2001 (Carretta et al. 2003). Live and dead stranded sea lions in California have also been subject to gunshot wounds and boat collisions.

Steller Sea Lion

Although no takes are anticipated, nor would they be authorized, researchers would conduct

remote surveys of Steller sea lion abundance within the action area. In 1990, the eastern stock of Steller sea lions, which includes animals east of Cape Sukling, Alaska (144°W), was listed as a threatened species under the ESA. The western stock, comprised of animals west of Cape Suckling, was listed as endangered in 1997 under the ESA. Despite the cessation of commercial hunts, the Steller sea lion population has experienced a rapid decrease since the mid-1980s with the western population declining by >64% in the last 30 years (Loughlin et al. 1992). The number in 1989 was estimated at 68,094 individuals with 1,764 animals from California (Loughlin et al. 1992). Numbers in Alaska have been declining by 7.8 % since 1994 (National Marine Mammal Laboratory 1995) and have declined by 3% in California (Le Boeuf et al. 1991, Ono 1993).

On South Farallon Island, California, the abundance of females declined an average of 3.6% per year from 1974 to 1997 (Sydeman and Allen 1999). Pup counts at Año Nuevo declined 5% annually through the 1990s (Carretta et al. 2003), and have apparently stabilized between 2001 and 2005 (M. Lowry, SWFSC unpublished data). In 2000, the combined pup estimate for both islands was 349. In 2005, the pup estimate was 204 on Año Nuevo. Pup counts on the Farallon Islands have generally varied from 5-15 (Hastings and Sydeman 2002, PRBO unpublished data). Pups have not been born at Point Reyes Headland since the 1970s and Steller sea lions are seen in very low numbers there currently (S. Allen, unpubl. data).

In the 1960s and 70s the number of sea lions caught in trawl nets peaked, while present day numbers are low. California fisheries target several of the most important prey items for Steller sea lions and millions of metric tons of prey have been removed by fisheries in recent decades. Incidental mortality of Steller sea lions in fisheries was very low between 1990 and 2001 in California. Shooting of adults during fisheries interactions in central California have been documented by the Marine Mammal Stranding Network and one adult male was found shot at Point Reyes, California in the 1990s. In Alaska, there are also several processes that have been debated as contributing to the decline of the Steller sea lion population, including global climate change and killer whale predation (Springer et al. 2003).

Northern Fur Seal

Northern fur seals of the eastern Pacific stock are listed as depleted under the MMPA (1988); however, the San Miguel Island northern fur seal stock is not considered to be depleted under the MMPA or listed as threatened or endangered under the ESA (Carretta et al. 2003). Found throughout the North Pacific Ocean, northern fur seals range from the Bering Sea to southern California in the east and central Japan in the west. Approximately three quarters of the total population breed on the Pribilof Islands in the southern Bering Sea; however, an outlying colony occurs on San Miguel Island off the coast of southern California, and more recently a colony was established on the Farallon Islands in 1996 (Pyle et al. 2001). Based on currently available data, the estimated annual level of total human-caused mortality and serious injury does not exceed the PBR level of 180. Therefore, the San Miguel Island stock of northern fur seals is not classified as a “strategic” stock.

The San Miguel Island stock reached a high in 1997 when pup production was estimated at just over 3,000 (Melin and DeLong, 2000), with a total population estimated between 12,272 and 12,408 (Carretta et al., 2002). In 1999, the San Miguel population again began to recover with a total pup count of 1,084, and a stock estimate of 4,336 seals (Carretta et al., 2002), although the number of territorial bulls (106) was lower than the 1997 count (Melin and DeLong, 2000). This

recovery continued through 2001 but remained below the 1997 level by 24 percent. Other signs of population recovery in 2000 and 2001 included good condition of 4-month-old pups and reduced late-season pup mortality, but the reduced number of adult females in the population after 1998 and the loss of most of the 1997 cohort suggest that fur seal pup production at San Miguel Island may remain depressed for several more years. A current population estimate in 2006 on the Farallon Islands was around 188, including 97 pups (PRBO, unpublished data).

According to the NMFS 2006 Draft Recovery Plan for the northern fur seal, both natural and human-induced factors can lead to reduced population levels. Anthropogenic factors such as subsistence harvests, direct and indirect effects of commercial fishing, marine debris, poaching, pollution, vessel and aircraft traffic, tourism, coastal development, noise, and oil and gas activities can have deleterious effects on the population. Natural factors include predation, parasitism, disease, and environmental change.

Physical Environment

The Action Area for this permit encompasses central California and includes the Marin County coastline of the Point Reyes Peninsula (PR), the Farallon Islands (FI) west of San Francisco, San Francisco Bay (SFB), and the Russian River (RR) in Sonoma County. Research activities would occur from land; however, vessels are necessary to access islands. Elephant seal haul-outs and rookeries will be studied year round but research efforts will be more intense during the breeding season (December through March). Harbor seals will be captured at haul-out sites at all locations; however, no capture or handling will take place during the breeding season (March 15-June 1). California sea lion, Steller sea lion, and northern fur seal colonies will be observed from cliffs no closer than 300 feet at PR and SFI. No capture or handling of the latter species will occur.

Farallon Islands

The Farallon Islands lie within the Gulf of the Farallones National Marine Sanctuary (GFNMS), approximately 20 miles south of Point Reyes, California. The islands are also protected under the Farallon National Wildlife and Wilderness Refuge, established in 1969, and contains the largest seabird colony in the U.S. outside of Alaska and Hawaii. The islands string north westwards for 8 km with a total land area of 0.42 km². The GFNMS protects an area of 948 square nautical miles (1,255 square miles) off the northern and central California coast. Located just a few miles from San Francisco, the waters are part of a nationally significant marine ecosystem. Encompassing a diversity of highly productive marine habitats, the Sanctuary supports an abundance of species. The islands were initially exploited for bird eggs and fur seal skins, and then were used as a lighthouse station and a radio station. Southeast Farallon Island is the largest island and is the only island in the chain that is inhabited.

Point Reyes

Point Reyes National Seashore (PRNS), managed by the National Park Service, is located 30 miles north of San Francisco and encompasses 70,000 acres of wild coastal beaches, headlands, estuaries, and uplands that embrace both wilderness and historic sites. The Point Reyes peninsula is bounded by Tomales Bay in the northeast and Bolinas Lagoon in the southwest. The PRNS is responsible for preserving nearly 300 historic structures, of which 60 are listed on the National Register of Historic Places including the Pierce Point Ranch and the Point Reyes Light Station. The PRNS has also identified twelve historic cultural landscapes within its boundaries and the north district of Golden Gate National Recreation Area administered by Point Reyes.

Nearly 490 species of birds, 40 species of land mammals, 20 species of cetaceans, over 900 species of vascular plants, and a plethora of amphibians, reptiles, insects, invertebrates, and fish are found and protected within the Seashore's boundaries with over 50 species of animals listed by the state or federal government as threatened, rare, or endangered.

San Francisco Bay

The main part of San Francisco Bay measures approximately 3 to 12 miles (5 to 20 km) wide east-to-west and between 48 miles (77 km) and 60 miles (97 km) north-to-south. Despite its value as a waterway and harbor, the many thousands of acres (several km²) of marshy wetlands forming the edges of the bay were considered for many years to be wasted space. As a result, soil excavated for building projects or dredged from channels was often dumped onto the wetlands and into other parts of the bay as landfill. From the mid-1800s through the late 1900s, more than a third of the original bay was filled and often built on, including tens of thousands of acres of salt marsh being converted into commercial salt ponds. Today, nearly 85% of the Bay's original salt marshes and shorelines have been altered.

Despite its urban and industrial character, San Francisco Bay and the Sacramento-San Joaquin Delta remain among California's most important ecological habitats. California's Dungeness crab, Pacific halibut, and Pacific salmon fisheries rely on the bay as a nursery. The few remaining salt marshes now represent most of California's remaining salt marsh systems, supporting a number of endangered species and providing key ecosystem services such as filtering pollutants and sediments from the rivers. Most famously, the bay is a key link in the Pacific Flyway. Millions of waterfowl annually use the bay shallows as a refuge. Two endangered species of birds are found here: the California least tern and the California clapper rail. San Francisco Bay provided the nation's first wildlife refuge, Oakland's artificial Lake Merritt (constructed in the 1860s) and America's first urban National Wildlife Refuge, the San Francisco Bay National Wildlife Refuge (SFBNWR) (1972). As of 2004, the SFBNWR spans 30,000 acres (121 km²) of open bay, salt pond, salt marsh, mudflat, upland and vernal pool habitats located throughout southern San Francisco Bay.

Russian River

The Russian River coastline stretches for approximately 55 miles just south of San Francisco. Starting at Lake Mendocino, the Russian River flows south through valleys in Mendocino and Sonoma County, and empties into the Pacific Ocean at Jenner, California. The river provides drinking water to some towns and cities in Sonoma County, and also acts as a drainage channel for much of the basin. Its banks are lined with vineyards throughout much of Sonoma County.

Research will be conducted in several areas of importance to marine mammals including: Sonoma County State Park, Point Reyes National Seashore, Golden Gate National Recreation Area, Farallon Island National Wildlife Refuge, and Gulf of the Farallones National Marine Sanctuary. Permits have been obtained by the applicant from each of the agencies, where required. The proposed research would not likely alter biological or physical environments of these areas. For example, surveys of pinnipeds would not be conducted during nesting season of seabirds where seabird colonies co-occur with pinniped colonies. No bottom trawling or other substrate altering activities are proposed. Although the action area includes pupping and resting locations of pinnipeds, pinniped populations at these sites have thrived since this type of research has been

conducted beginning in the 1970s and 1980s.

No significant impacts of permit issuance on the physical environment are anticipated. Current human activities within the proposed action area are limited due to the numerous marine sanctuaries, refuges, and parks that are designated within the action area. The GFNMS is closed to the public, and the PR Sanctuary is monitored closely by the National Park Service. Human activities are highest within the Russian River area and the San Francisco Bay region. These activities include commercial fishing and recreational and tourist activities such as boating and kayaking. The presence and effects of researchers in the action area are considered to be negligible when compared to other human activities in the area.

Issuance of the permit is not reasonably expected to adversely affect entities listed in or eligible for listing in the National Register of Historic Places or to allow substantial damage to the ocean and coastal habitats and/or essential fish habitat (EFH) as defined under the Magnuson-Stevens Act and identified in fisheries management plans. Activities that have been shown to affect EFH include disturbance or destruction of habitat from stationary fishing gear, dredging and filling, agricultural and urban runoff, direct discharge, and the introduction of exotic species. The Proposed Action does not include any of these types of activities and is therefore not likely to have an impact on any designated EFH.

The primary impacts of the proposed action would be limited to the biological environment, and, more specifically, to targeted pinnipeds within the action area. The protocols and effects of the specific research activities on individual marine mammals are not uncertain and are discussed below.

Target species

Northern elephant seals

Regarding elephant seals, the purpose of the research is to determine how northern elephant seal population dynamics and health change in response to oceanographic events and anthropogenic impacts and also to monitor population expansion into new areas where there is potential for negative interactions with other wildlife and humans. To answer these objectives, elephant seals would be flipper tagged, marked, and have swabs and blood samples taken. All age, sex, and reproductive classes would be taken at PR and SFI but only males in the subadult (>1 yr. but less than 9 years) or adult (>9 years) age classes would be taken at the RR.

Handling of elephant seals would be minimal because no captures would be made and tagging, marking, and swabbing of seals would be accomplished while seals are resting or asleep, without the use of manual restraint (except animals < 2 years old) or drugs. Tagging seals requires a researcher to pick up the rear flipper while the seal is resting, positioning a cattle ear tag between the digits of the rear flipper in the webbing, and closing the tag applicator. Upon release of the applicator the rear flipper is released. Researchers release flippers immediately if the seal tries to move away from the researcher. Sampling time would be < 5 minutes per seal. Elephant seals have been tagged in this manner for decades with no significant adverse effects.

During tagging activities, seals may evade approaching researchers, exhibit stress with increased respiration, and may vocalize; however, researchers tag seals when they are resting and do not manually restrain the seals. Seals may awake and startle from these procedures and in some cases

move away after the procedure, but in some cases they would resume resting or sleeping soon after the researcher has moved out of sight. No nursing pups or their mothers would be tagged.

Samples of mucous from the nose, vagina or anus of the seals for bacterial and viral analysis would be taken with swabs only from animals < 2 years old and when the seal is resting. This may cause initial discomfort and disturbance. Researchers quickly move away from seals after procedures to reduce disturbance. Sampling time would be < 5 minutes per seal. When blood is collected from animals < 2 yr old, 2-3 people would manually restrain the seal, without the use of the drugs, controlling the flippers and head. Handling time would be < 15 minutes. When handling elephant seals to collect blood, a veterinarian would always be present from The Marine Mammal Center (TMMC). Estimated time on the haul out sites conducting tagging and surveys will be a maximum of 3 hours per site visit. Each site may be visited a maximum of two times per week.

Hair dye is applied to sleeping seals so that they are unaware of the presence of the researcher, and the dye is applied far away from the face. Dye letters are < 10" x 10" in size on the rump or flank of the seal. Letters reflect the location of the seal and allow for individual identification from a greater distance to reduce disturbance.

Harbor seals

For Project 2, the purpose of the research is to monitor health, examine the effects of disturbance on activity patterns, and determine the ecological role of harbor seals (including food habits and dispersal) in the nearshore ecosystem of the Gulf of the Farallones, extending from the Russian River south to and including San Francisco Bay. Harbor seals are an excellent indicator of ecosystem status because they respond to oceanographic variability (Sydeman and Allen 1999, Allen 2004), inhabit the nearshore in proximity to humans, are upper trophic level predators, accumulate pollutants, and interact with fisheries (Kopeck and Harvey 1995, Harvey and Weise 1997). To improve disease predictions, researchers will examine how risk factors (types and levels of human disturbance) associate with the prevalence and diversity of disease agents in harbor seals (Neal et al. 2005). Disease transmission would be tracked from terrestrial sources to harbor seals. The researchers also wish to examine and compare movement patterns among different age-classes in harbor seals and to estimate juvenile harbor seal survivorship along the central California coast. To meet these objectives, harbor seals would be captured, handled, restrained, tagged (either external or internal), have swabs and samples taken, and have scientific instruments attached.

Seals would likely attempt to evade researchers as they approach by either boat or on foot. Capture techniques are standard (Jeffries et al. 1993), have been used by the Principal Investigator (PI) and Co-investigators (CIs) for many years, and only experienced personnel would be involved in capture events. A veterinarian would be present for all capture events to monitor respiration and seal condition. Any seal exhibiting symptoms of stress would be immediately released. During captures and handling, all animals are handled as quickly as possible and safe for the animals and the researchers. All care is taken to handle seals humanely to reduce stress. Capture, tissue sampling and tagging seals would likely cause stress and pain, but the effects are short and no permanent effects are expected to occur.

Once the seals are captured and placed in hoop nets, they would likely exhibit increased respiration. They may also become overheated. To reduce overheating, seals would be washed

down with cold water. Respiration rates would be monitored by a veterinarian for all seals being handled on site during the capture to ensure that rates are within the normal range. Seals can go into shock during capture during which time they can hold their breaths; the veterinarian would monitor seals for this condition and act accordingly. Actions to be taken if an animal reacts negatively to handling (i.e., goes into dive response) include injection of Doxapram (1-5 ml/kg intravenously) to stimulate respiration, and epinephrine to stimulate circulation, as per recommendation of Dr. F. Gulland, TMMC. In over twenty years of capturing and handling seals at Point Reyes, involving over 600 seals, only one died during handling when it went into shock.

To avoid drowning seals in seine nets, the net would be pulled ashore so that all animals are in < 1 ft of water, and seals would be extracted immediately and placed into smaller hoop nets. The process of pulling the net ashore involves less than 15 people to pull the net and monitor seals at risk. Those seals that become entangled in the net are removed immediately. Most seals are not entangled but are confined by the seine net. Seals are frightened by the process of capture and so it is important to remove them from the seine net as soon as possible and to place them in the hoop nets where they can be closely monitored by designated personnel. Seals may bite each other while in the seine net and so individual seals are separated to avoid contact. Researchers have never lost a seal to drowning using this capture procedure for over 20 years; however, on very rare occasions seals have been drowned or injured by the propeller of the capture boat in other locations (Jeffries et al. 1993). To reduce the risk, researchers would continue with current procedures that include a limited number of seals captured per net set, sufficient personnel to handle the seals, equipment in good order, experienced boat operators and animal handlers, and a veterinarian present.

Swabs and blood collection would be performed under manual restraint and may cause initial discomfort. There should not be any infection or injury and healing time is minimal. For biopsy sampling of blubber, injection with a local anesthetic (such as lidocaine) would be used to eliminate any pain associated with sample collection. Sterile instruments would be used under veterinary supervision to minimize infection. Tissue samples collected would follow collection protocols and guidelines and be in collaboration with TMMC (F. Gulland, pers. com.). Tissue to be collected includes blood, blubber, and hair clippings. A veterinarian would be onsite during captures to ensure humane and professional treatment of the seals. The maximum handling time per seal will be 30 minutes. Based on healing times observed at TMMC, biopsy sites should heal in about a week (F. Gulland pers. comm.), although healing time may vary in the wild.

While individual harbor seals are restrained they would be tagged on both rear flippers in similar manner as elephant seals, and standard length, curvilinear length, and girth (hip, maximum, and auxiliary) would be measured using a flexible metric tape. Morphometric data would be shared with Dr. J. Harvey for an assessment of general body condition to be compared with animals from other locations. Once captured, seals would be weighed, sexed, and blood and tissue samples taken. Seals would be fitted with a head-mounted VHF radio tag or dorsally-mounted satellite-linked Platform Terminal Transmitter (PTT). Tags would be attached to the seals' pelage using Loctite 422 cyanoacrylate adhesive (radio tags) or Devcon 5-minute epoxy (PTTs). There should be no pain, infection, or injury associated with this type of tag attachment. Alternatively, for longer term survival data (2-5 years), tags may be implanted subcutaneously underneath the blubber layer (Lander et al. 2005) in adult non-pregnant females. The implantable tag (model IMP/300L; Telonics) was first used on harbor seals in central California in 2000 and around 15

harbor seals are currently carrying these devices without any apparent problems (F. Gulland, pers. com). Estimated time on the haul out sites conducting tagging would be a maximum of 4 hours per capture event. Tagged animals have been monitored by the PI and CIs for many years without noting adverse effects from the presence of the tags, and no unusual behavior has been observed in tagged animals.

Subcutaneous implant tags may be less obtrusive for the tagged seals and provide data that cannot be gathered any other way by tracking individuals for multiple years. The internal placement of tags in theory could reduce drag, possible entanglement, and possible changes in interactions with conspecifics. Internal tags have been successfully placed in sea otters along California and Washington, with no apparent problems. This method has greatly improved the ability to monitor movements, survival, and foraging ecology of this species for consecutive years. Seals likely will experience initial discomfort from the 3-5cm incision; however, based on analysis of the procedure on seals in captivity, the incision heals quickly and the seals do not appear to have long term adverse affects from the procedure or the presence of the implant (Lander et al. 2005).

It is rare that researchers have a group of untagged control animals available to assess the effects of tagging and handling, but this was possible with the endangered Hawaiian monk seal (*Monachus schauinslandi*) because many of the animals are recognized by natural markings and scars. A study on these animals found no difference in survival between animals that were handled, instrumented, and bled and those that were not (Baker and Johanos 2002).

Feces are collected from the ground throughout the year to describe the diet of harbor seals. Collection is combined with captures of seals to avoid additional disturbance.

Research activities may incidentally disturb non-target seals because species intermingle on colonies. On FI, California sea lions, northern elephant seals and harbor seals may be incidentally disturbed tagging of elephant seals. At PR, tagging of harbor seals and elephant seals may result in the incidental disturbance of individual California sea lions, harbor seals or elephant seals. These disturbances are short in duration and are scheduled to minimize the number of animals and the length of time. Incidental disturbance has minimal impacts on all species included in the permit because seals usually return to a site or a nearby site within 30 minutes (Allen et al. 1985, Allen pers. obs.).

All activities would be scheduled in order to minimize the impacts of incidental disturbance to seals. Disturbance is not avoidable during the capture and handling of seals because the seals are gregarious and multiple species occur at haul out sites. Researchers would minimize disturbance by not conducting studies during the annual breeding cycle of seals or during specific tidal cycles. For example, they will not conduct studies during the harbor seal breeding seasons, in order to avoid potential separation of females and pups. When tagging elephant seals, they would avoid areas where harbor seals and sea lions are co-occurring. Researchers expect that the disturbances will have minimal short-term effects on the seals and no long-term effects. Actions are conducted as quickly and unobtrusively as possible, to reduce the length and number of seals disturbed. Researchers keep a low, hunched profile, speak softly, and generally minimize actions that might startle non-target species.

In each of these projects, seals would be monitored after the activities to determine that the

individuals and the colony do not experience adverse effects. Veterinarians would be onsite during captures to ensure humane and professional treatment. Seals would be monitored in the field at a distance of 300-500 ft at specific observation locations in order not to disturb seals and to track the effect of the activities. Seal colonies are monitored a minimum of 2 times per week during the breeding season for harbor seals and elephant seals, and weekly during the non-breeding season. Immediately after capture and handling, individual seals would be followed for a couple of days to determine that the animals' behavior is normal (i.e., hauling out regularly). Individual seals that are tagged with satellite/radio and flipper tags would be monitored a minimum of one time per day during the first week and one time per week, for the life of the device.

California Sea Lions, Steller Sea Lions, and Northern Fur Seals

Project 3 is investigating population and health assessments with populations of Steller and California sea lions at PR and SFI and northern fur seals at SFI. This work will build upon a 35 year dataset at SFI and a 15 year dataset at PR. Substantial insight could be gained by in-depth examinations of all these species in this proposed project. The eastern stock of Steller sea lions is listed as threatened and population declines have been documented at SFI (Sydeman and Allen 1999, Hastings and Sydeman 2002). Monitoring of the SFI and fledgling colony at PR could provide critical data on the magnitude and nature of future population trends in our study region. For California sea lions, these studies could help investigate whether and how the current trajectory of substantial population growth in California stocks (Carretta et al. 2003) will continue. For northern fur seals, the new colony established at SFI (Pyle et al. 2001) is growing exponentially (PRBO, unpublished data.). Considering the massive declines in productivity at the main fur seal breeding areas in the Pribilof Islands (Towell et al. 2006), in depth monitoring of growing new colonies will be critical to assessment of these stocks and examinations of their expansion.

Research on these species consists of observational monitoring from cliffs 300-500ft from colonies. According to NMFS guidelines, reducing disturbance to marine mammals occurs at a distance of 300 feet and the experience of the research team at SFI has determined that these distances reduce disturbance to seals. Furthermore, no capture, restraint or handling of animals would occur. Counts, by age and sex class, would be conducted on northern fur seals, California sea lions, and Steller sea lions to provide indices of the populations. Due to the distance between the haul-out sites and placement of researchers, no takes of Steller sea lions would occur. These data would be used to test whether the trend of the populations are increasing, stable or decreasing, and would correlate population trends and productivity, as measured by the number of pups produced annually with environmental data including SST, the Bakun Upwelling Index, sea level, and changes in mainland terrestrial habitats (Sydeman and Allen 1999). It is not anticipated that the activities associated with this project would cause harmful or long-term stress, pain or injury to any of the species surveyed. The surveys would be conducted at a distance ≥ 300 feet from colonies and likely seals and sea lions would not detect the researchers. Therefore, it is not believed that land based surveys from cliffs would result in disturbance or have a negative impact on the population of California and Steller sea lions and northern fur seals.

Incidental Harassment

While conducting surveys of pinnipeds and capturing pinnipeds, non-target individuals may be incidentally disturbed on SFI, SFB and PR. During the research activities every effort will be

made to avoid incidental disturbance; however, large gatherings of species co-occur on beaches where research is conducted. Thus the capture of one species may incidentally involve the disturbance of other species. Researchers keep low profiles and move slowly to avoid stampeding the seals. Research of harbor seals does not occur during the pupping season at any site, in order to avoid causing pup/mother separations. Researchers will avoid disturbance to fur seals at SFI and Steller sea lions at both SFI and PR by not approaching them within 300-500 feet.

Up to 300 elephant seals, including all sex and age classes, at PR and SFI and 300 harbor seals at PR may be incidentally disturbed during captures. In addition, unintentional taking of up to 2,900 harbor seals during harbor seal captures at PR and SFB, 2,100 harbor seals during scat collection at PR and SFB, and 150 harbor seals during pinniped surveys at PR and SFI may occur.

California sea lions may be unintentionally harassed during tagging activities on SFI and PRH. Disturbance to fur seals would be avoided until after the pupping and breeding season is complete. Up to 300 subadult and adult males California sea lions at both SFI and PR may be incidentally disturbed during research activities. Up to 5 Northern fur seals may be unintentionally disturbed during elephant seal tagging activities on SFI. No Steller sea lions will be harassed during remote surveys or research conducted on elephant or harbor seals.

Other wildlife

There are various other marine mammal species that can be found within the action area including humpback (*Megaptera novaeangliae*), blue (*Balaenoptera musculus*), gray (*Eschrichtius robustus*), and killer (*Orcinus orcas*) whales. However, these animals are strictly marine species and are only likely to be encountered during transit to the islands to conduct land based research. In addition, most of these species, such as the gray whale, are migratory and only passing through the action area. Details on the distribution, abundance, productivity and annual human-caused mortality for these marine mammal species can be found in the U.S. Pacific Marine Mammal Stock Assessment Reports, which are available in PDF from the NMFS website (<http://www.nmfs.noaa.gov/pr/>). The permit applicant has not requested takes of marine mammals other than elephant, harbor, and northern fur seals and California sea lions; therefore, the permit would not authorize takes of any other species.

Various non-target marine and terrestrial wildlife including sea birds inhabit the action area. There are approximately 12 species of seabirds, none of which are listed as threatened or endangered under ESA, that nest near seal colonies on the outer coast and on the Farallon Islands. These include the Brant's, pelagic, and double-crested cormorant, western gull, black oystercatcher, common murre, pigeon gillimont, rhinoceros and Cassin's auklet, Ashy and Leach's storm petrel, and Tuft puffin. In addition, the endangered brown pelican roosts in the action area but does not breed there. At Point Reyes, a diversity of bird species inhabits the area including the threatened snowy plover and the northern spotted owl. All birds at PR are protected under jurisdiction of the National Park Service.

The location where observers survey seals during the breeding season is a sufficient distance that seabirds are not disturbed (@500-1000 feet) and parts of the Farallon Islands are completely restricted during the seabird nesting season. During the non-nesting season, brown pelicans roost near elephant seal colonies and on offshore rocks where harbor seals are counted; however, observers would not approach these sites close enough to disturb these seabirds. Furthermore,

elephant seals in close proximity at Point Reyes during the seabird nesting season will not be surveyed in order to avoid disturbing nesting birds. During winter months, common murrelets may be present when they visit nesting rocks (usually a day after storms); however, they would be avoided by rescheduling surveys for when they are absent. Other sites do not have birds roosting or nesting sites nearby that might be of concern. The only terrestrial mammal that has the potential to be disturbed is the Tule elk while hiking out to harbor seal survey locations. Observers are trained in avoiding Tule elk when hiking off trail.

All research activities on the Farallones are regulated by USFWS. There are year round and seasonal closures for different areas of the islands for different wildlife restrictions. The park service has restrictions and guidelines as part of obligations under ESA and the Migratory Bird Treaty Act. Several wildlife areas are restricted within the park to protect particular species such as Tule elk and pinnipeds. The park service has special permits to conduct activities including research from USFWS and NMFS related to several rare plants, northern spotted owls, red-legged frogs and coho salmon. All research activities must be cleared by USFWS to insure minimal wildlife disturbance. It is not expected that any animals, other than the target species, would be affected by the research activities on pinnipeds; therefore, issuance of the proposed permit and resulting research on the target species' is not expected to significantly adversely affect other marine mammal species, sea birds, or terrestrial wildlife.

The permit would require the holder to submit annual reports on the observed effects of research to both target and non-target marine mammal species, and NMFS has the authority to revoke, suspend, or modify a research permit independent of a request from the researcher. If NMFS determined, based on information in permit reports or elsewhere, that the permitted activities were having a greater impact than anticipated, NMFS could modify the permit with additional mitigation measures or, if appropriate, require the researcher to cease any or all activities.

Other factors

Issuance of the permit is not expected to have any adverse impact on endangered or threatened species. Although ESA-listed species may be found within the action area, none are the focus of the proposed permit and as such no human activities would be directed at them. Issuance of the permit amendment is not expected to affect designated critical habitat of threatened or endangered species because the research activities are not likely to noticeably alter habitat.

There are no significant social or economic impacts of issuance of the permit amendment so there are no significant socio-economic impacts interrelated with significant natural or physical environmental effects.

Issuance of the permit amendment is not expected to have a substantial adverse impact on public health and safety. While there may be some risk to individual researchers associated with conducting field work, the likelihood of injury to the researchers is greatly minimized when these activities are conducted by or under the close supervision of experienced personnel, as required by all permits. Health risks to researchers working directly with pinnipeds include respiratory illness from working on haul-outs and rookeries, The biggest zoonotic threat to researchers is seal finger, a bacterial infection that can be transmitted from seals to humans with cuts or open wounds. However, this infection responds rapidly to antibiotics such as tetracycline and chances of

infection are minimized when the handler wears gloves, washes hands frequently, and is experienced in seal research activities (Mazet et al., 2004). This research team has extensive experience handling and capturing seals and is aware of safe handling practices; therefore, disease transmission possibilities would be minimized.

Issuance of the permit does not establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration. Each permit application received is evaluated upon its own merits relative to the criteria established in the MMPA and NMFS implementing regulations. Issuance of a permit to a specific individual or organization for a given research activity does not in any way guarantee or imply that NMFS will authorize other individuals or organizations to conduct the same research activity.

There is no significant controversy regarding the effects of permit issuance on the human environment. NMFS received comments on the proposed permit from the Marine Mammal Commission, which recommended issuance of the permit. No substantive comments regarding the proposed permit were received from the public.

Cumulative Impacts

The proposed permit amendment would be one of six permits or authorizations issued by NMFS for research on northern elephant, harbor, and northern fur seals and California and Steller sea lion in California. There are numerous existing permits or authorizations that allow takes of cetaceans in California; however, these are strictly aerial and/or vessel surveys targeted at cetaceans and would not affect pinnipeds on shore.

Permit No. 87-1851 issued to Dan Costa involves research on California sea lions to investigate foraging, diving, energetics, food habits, and at-sea distribution along the California coast. Procedures include capture, sedation, morphometrics, isotope and Evans blue dye administration, blood sampling, tagging/marking, instrument attachment, stomach lavage and enema, blubber/muscle biopsy, metabolic measurements, stomach temperature telemeters, and milk sampling. Up to 100 pups/juveniles and 100 adults are authorized to be sampled annually, with some or all of the procedures performed. Harassment of unlimited numbers of California sea lions, harbor seals, northern elephant seals, and northern fur seals annually incidental to these activities is also permitted. Unintentional research-related mortality may occur to up to five California sea lions over the course of the permit. This permit expires on January 31, 2012.

Permit No. 555-1878 is pending and may be issued to James Harvey in March 2007. This permit will allow for research to examine the biology, ecology, and monitor health and condition of coastal populations of harbor seals in California, Oregon, Washington, and Alaska over a 5-year period. The hypotheses of the research are: (1) actual abundance can be determined using aerial surveys and a correction factor, and distinct stocks exist latitudinally; (2) seals are a major (>5%) source of natural mortality for nearshore fishes and cephalopods; (3) pollutants and anthropogenic inputs are compromising seal health; (4) human disturbance causes increased energetic costs and seals can have significant effects on fisheries; (5) dispersal of juvenile harbor seals increases survival; and (6) male harbor seals establish underwater territories and maintain hierarchies using underwater vocalizations and aggression. To test these hypotheses researchers will capture a maximum of 670 harbor seals annually. Animals captured would have some or all of the

following procedures done: mass and morphometrics, blubber depth and biopsy, lavage/enema, flipper tagging and instrument application, blood sample, swabs, and skin and hair sampling. An additional 2,910 individuals may be taken annually via Level B harassment by incidental disturbance during capture or scat collection and exposure to playback of vocalizations. Incidental disturbance to up to 90 California sea lion and 40 northern elephant seals, annually, may occur. The permit would also allow up to two incidental mortalities of harbor seals per year. If issued, this permit will expire on February 28, 2012.

Permit No. 782-1812 and 782-1702 issued to the National Marine Mammal Laboratory authorizes six research projects related to population and health assessment and studies of the ecology of and disease in the California sea lions, harbor seals and northern elephant seals. Research activities under permit no. 782-1812 involve harassing, capturing, sampling (blood and various tissues), marking (by dye, flipper tag, neoprene patch, and hot brand), attaching instruments, injecting California sea lion and northern fur seal pups with either an antihelminthic treatment or placebo, incidental harassment, and limited mortality of the species listed above only in the Channel Islands. Therefore, these activities would not occur in the action area of the proposed research; however, individuals may be sampled from the same stocks as in the proposed action. Research under permit no. 782-1702 involves aerial and vessel surveys, ground counts, and the research activities listed above to be conducted on the listed pinniped species in Washington and Oregon. In addition, up to 400 California sea lions will be captured, restrained, measured, and sampled in breeding and haul-out sites in throughout California. However, most of these research activities, while authorized throughout California, will not take place in the same area as the proposed permit but may be conducted on animals on the same stocks as in the proposed action.

Permit No. 774-1714 issued to Southwest Fisheries Science center which authorizes research to conduct population assessments for pinnipeds to determine abundance, distribution patterns, length frequencies, breeding densities, to determine the diet from collection of scat and spew, and to assess the status of pinniped species and identify fishery-marine mammal conflicts. Up to 275,000 California sea lions, 90,000 northern elephant seals, and 99,000 harbor seals may be taken via aerial, vessel, and ground surveys under Level B harassment per year throughout California, Washington, and Oregon. In addition, up to 275,000 California sea lions may be taken incidental to scat and spew collection in California. No mortalities of pinnipeds are authorized under this permit. The permit expires on June 30, 2009.

Permit No. 859-1680 issued to U.S. Air Force authorizes annual takes of up to 1200 California sea lions, 750 northern elephant seals, 300 northern fur seals, and 700 harbor seals inhabiting Vandenberg Air Force Base and the northern Channel Islands annually by harassment during various activities including capture, sedation, blood sampling, skin biopsy, physiological measurements, hearing sensitivity tests, attachment of scientific instruments, temporary captive maintenance, recapture for retrieval of instruments, surveys of abundance and distribution, incidental harassment, and accidental mortality. The movements and foraging behavior of seals exposed to launch noise and/or sonic booms will be compared with non-exposed control animals using remote VHF radio-telemetry, satellite transmitters, and electronic data loggers. Up to 4 research-related mortalities of any species of seals or sea lions listed above per year is authorized. This permit expires on January 1, 2008. Research activities authorized in this permit is restricted to Vandenberg Air Force Base and the Channel Islands. Therefore research activities do not occur in the action area of the proposed permit; however, animals of the same stocks may overlap.

All permits issued by NMFS for research on marine mammals contain conditions requiring the permit holders to coordinate their activities with those of other permit holders conducting research on the same species in the same areas are coordinated, and, to the extent possible, data are shared to avoid unnecessary duplication of research and disturbance of animals. Of the above permits, only two are expected to occur within the same action area of the proposed permit. The applicant of the proposed research has described in her application that collaboration will be conducted with any researchers who may also be working in the action area.

As discussed above, the current annual human-caused mortality and serious injury for the stocks of elephant, harbor, and northern fur seals and California and Steller sea lion that are the subject of the permit is estimated at well below the PBR for those stocks. The proposed permit allows up to 2 harbor seals, annually, but no more than 5 over the course of the permit to succumb to research-related mortality. In addition, the researchers would be required to cease all activities if the research reaches authorized mortality and report immediately to NMFS.

The environmental impacts of the research under the proposed permit are expected to be minimal, predominantly related to short-term stress, disturbance, and temporary displacement of pinnipeds, and no significant adverse environmental impacts of permit issuance are anticipated. In addition, the cumulative impacts from the proposed research are not expected to impact pinniped stock populations.

Conclusion: In reviewing the permit request, NMFS determined that the proposed action is not controversial for environmental reasons; public health and safety would not be affected; no unique geographic area would be affected; the effects of this research are not highly uncertain, nor do they involve unique or unknown risks, and no endangered species would be affected. Issuance of this permit will not set a precedent for future actions with significant effects, nor does it represent a decision in principle about a future consideration. There are no individually insignificant but cumulatively significant impacts associated with the proposed action, and there is no adverse effect on historic resources. The permit contains mitigating measures to minimize cumulative effects and to avoid unnecessary stress to the subject animals by halting research activities should an animal exhibit signs of stress, pain, or suffering. For the reasons discussed, NMFS has concluded that, consistent with the criteria specified in NAO 216-6 (revised May 20, 1999) for determining the significance of a proposed action, the issuance of the permit amendment is categorically excluded from the need to prepare further environmental analyses.

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Attachment – Take Tables

Table 1. Authorized number and manner of annual takes of northern elephant seals for different age classes (pups <1 yr.; subadults > 1yr. but < 9 yrs. for males and 4 yrs. for females; adults > 9 yrs. for males and 4 yrs. for females), sexes (M = males, F = females), and reproductive condition (PREG = presumed pregnant, NP = non-pregnant) at South Farallon Island and West End Island (SFI), Point Reyes (PR), and the Russian River (RR), California. Takes may occur year-round.

TABLE 1: NUMBER OF AUTHORIZED TAKES OF ELEPHANT SEALS PER YEAR								
ACTIVITY	Sex and Age Class							LOCATIO N
	PUPS		SUBADULTS		ADULTS			
	M	F	M	F	M	F PREG	NP	
Flipper tag, dye-mark	0	0	50	25	150	100	75	SFI
Flipper tag, dye-mark	0	0	50	25	150	100	75	PR
Flipper tag, dye-mark	0	0	25	0	25	0	0	RR
Capture (manual restraint), dye mark, flipper tag, blood	500	500	0	0	0	0	0	SFI
Capture (manual restraint), flipper tag	355	355	0	0	0	0	0	PR
Capture (manual restraint), flipper tag, weigh, blood, swab (oral, rectal, nasal)	145	145	0	0	0	0	0	PR
Re-tag	0	0	25	25	25	10	15	SFI, PR,RR
Unintentional takes during all pinniped surveys and harbor seal captures (level B)	10	10	100	100	50	0	30	SFI, PR, RR
Research Related Mortality	No mortality of elephant seals is authorized under this permit							

Table 2. Authorized number and manner of annual takes of harbor seals for different age classes (pups < 1 yr., subadults > 1yr. but less than 45 kg., adults > 45 kg.), sexes (M = males, F = females,), and reproductive condition (PREG = presumed pregnant, NP = non-pregnant) at South Farallon Island and West End Island (SFI), Point Reyes (PR), San Francisco Bay (SFB), and the Russian River (RR), California. Activities are authorized from June 1- March 14th annually.

TABLE 2: NUMBER OF AUTHORIZED TAKES OF HARBOR SEALS PER YEAR								
ACTIVITY	Sex and Age Class							LOCATIO N
	PUPS		SUBADULTS		ADULTS			
	M	F	M	F	M	F PREG	NP	
Capture, flipper tag, dye-mark, weigh, hair clip, blubber and skin biopsy (tetracycline), swab (oral, rectal, nasal), emergency epinephrine/Doxapram, Instrument attachment (VHF/radio, satellite, TDR) ¹	0	0	50	50	50	25	0	SFI, PR, SFB, RR
Capture, flipper tag, dye mark, weigh, hair clip, blubber biopsy, skin sample, swab (oral, rectal, nasal), tetracycline injection emergency Doxapram/epinephrine, Implant tag, gas anesthesia, instrument attachment ¹	0	0	10	10	10	0	10	SFI, PR, SFB, RR
Capture, flipper tag, weigh, blubber biopsy, skin sample, hair clipping, blood sample, swabs (oral,	50	50	0	0	0	0	0	SFI, PR, SFB, RR

rectal, nasal), emergency Doxapram/epinephrine,								
Incidental disturbance during scat collection (level B)	0	0	500	500	500	100	500	PR, SFB
Incidental disturbance during captures (level B)	25	25	700	700	700	50	700	PR, SFB, RR
Incidental disturbance during all pinniped surveys (level B)	5	5	30	30	30	20	30	SFI, PR, SFB, RR
Research-Related Mortality	2 per year; no more than 10 in a 5 year period.							

Table 3. Authorized number of incidental takes of California sea lions and northern fur seals for harassment (Level B) per year during pinniped research activities at South Farallon Island and West End Island (SFI) and Point Reyes (PR).

TABLE 3: INCIDENTAL TAKES (LEVEL B) OF CALIFORNIA SEA LIONS (CSL) AND NORTHERN FUR SEALS (NFS) PER YEAR			
Species	Age/Sex Class	No. of Takes	Location
CSL	All	300	SFI
CSL	All	300	PR
NFS	All	5	SFI



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

Permit No. 373-1868-00
Expiration Date: April 15, 2012
Reports Due: July 14, annually

PERMIT TO TAKE PROTECTED SPECIES¹ FOR SCIENTIFIC PURPOSES

I. Authorization

This permit is issued to the Point Reyes Bird Observatory (PRBO) Conservation Science 3820 Cypress Drive, # 11, Petaluma, CA 94954, [Responsible Party: Dr. William J. Sydeman], pursuant to the provisions of the Marine Mammal Protection Act of 1972 as amended (MMPA; 16 U.S.C 1361 *et seq.*) and the regulations governing the taking and importing of marine mammals (50 CFR Part 216).

II. Abstract

The objectives of the permitted activity, as described in the application, are to study and monitor population trends, health, and ecology of pinnipeds in California, specifically at the Farallon Islands, Point Reyes Peninsula, San Francisco Bay, and in Sonoma County near the Russian River. Harbor seals (*Phoca vitulina richardsi*) and northern elephant seals (*Mirounga angustirostris*) are the primary species of study; researchers will also remotely survey California sea lions (*Zalophus californianus*), Steller sea lions (*Eumetopias jubatus*), and northern fur seals (*Callorhinus ursinus*) and their responses to changes in the environment. No harassment of Steller sea lions is authorized under this permit.

III. Terms and Conditions

The activities authorized herein must occur by the means, in the areas, and for the purposes set forth in the permit application, and as limited by the Terms and Conditions specified in this permit, including all attachments and appendices. Any permit noncompliance constitutes a violation and is grounds for permit modification, suspension, or revocation, and for enforcement action.

A. Duration of Permit

- 1 Personnel listed in Condition C.1 of this permit (hereinafter "Researchers") may conduct activities authorized by this permit through April 15, 2012. This permit expires on the date indicated and is non-renewable. This permit may be extended by the Director, National Marine Fisheries Service (NMFS) Office of Protected Resources, pursuant to applicable regulations and the requirements of the MMPA.

¹"Protected species" include species listed as threatened or endangered under the ESA, and marine mammals.



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2. Researchers must suspend all permitted activities in the event serious injury² or mortality³ of protected species reaches that specified in Tables of Section B.1. The Permit Holder must contact the Chief, NMFS Permits, Conservation and Education Division (hereinafter "Permits Division") by phone (301-713-2289) within two business days. The Permit Holder must also submit a written incident report as described in Condition E.2. The Permits Division may grant authorization to resume permitted activities based on review of the incident report and in consideration of the Terms and Conditions of this permit.
3. If authorized take⁴ is exceeded, Researchers must cease all permitted activities and notify the Chief, "Permits Division" by phone (301-713-2289) as soon as possible, but no later than within two business days. The Permit Holder must also submit a written incident report as described in Condition E.2. The Permits Division may grant authorization to resume permitted activities based on review of the incident report and in consideration of the Terms and Conditions of this permit.

B. Number and Kind(s) of Protected Species, Location(s) and Manner of Taking

1. The tables in Appendix 1 outline the number of protected species, by species and stock, authorized to be taken, and the locations, manner, and time period in which they may be taken.
2. Researchers working under this permit may collect visual images (*i.e.*, any form of still photographs and motion pictures) as needed to document the permitted activities, provided the collection of such images does not result in takes of protected species.

² A serious injury is defined by regulation as any injury that will likely result in mortality.

³ This permit allows for unintentional serious injury and mortality to harbor seals caused by the presence or actions of researchers up to the limit in Table 2. This includes, but is not limited to; deaths of dependant young by starvation following research-related death of a lactating female; deaths resulting from infections related to sampling procedures; and deaths or injuries sustained by animals during capture and handling, or while attempting to avoid researchers or escape capture.

⁴ By regulation, a take under the MMPA means to harass, hunt, capture, collect, or kill, or attempt to harass, hunt, capture, collect, or kill any marine mammal. This includes, without limitation, any of the following: The collection of dead animals, or parts thereof; the restraint or detention of a marine mammal, no matter how temporary; tagging a marine mammal; the negligent or intentional operation of an aircraft or vessel, or the doing of any other negligent or intentional act which results in disturbing or molesting a marine mammal; and feeding or attempting to feed a marine mammal in the wild. Under the ESA, a take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to do any of the preceding.

- a. The Permit Holder may use these images in printed materials (including commercial or scientific publications) and presentations provided the images are accompanied by a statement indicating that the activity depicted was conducted pursuant to Permit No. 373-1868-00. This statement must accompany the images in all subsequent uses or sales.
 - b. Annual reports required pursuant to Condition E.3 must note such incidental scientific, educational, or commercial uses of the images.
3. Upon written request from the Permit Holder, approval for photography, filming, or audio recording activities not essential to achieving the objectives of the permitted activities, including allowing personnel not essential to the research (e.g. a documentary film crew) to be present, may be granted by the Chief, Permits Division.
 - a. Where such non-essential photography, filming, or recording activities are authorized they must not influence the conduct of permitted activities in any way or result in takes of protected species.
 - b. Personnel authorized to accompany the Researchers during permitted activities for the purpose of non-essential photography, filming, or recording activities are not allowed to participate in the permitted activities.
 - c. Annual reports required pursuant to Condition E.3 must note such non-essential activities.
 - d. The Permit Holder and Researchers cannot require or accept compensation in return for allowing non-essential personnel to accompany Researchers to conduct non-essential photography, filming, or recording activities.
 4. Researchers must comply with the following conditions related to the manner of taking:
 - a. Researchers must carry out activities efficiently and use biologists experienced in capture and sampling techniques to complete the activities as quickly as possible to reduce disturbance of rookeries, haul-outs, and colonies, and to minimize handling time of individual pinnipeds.
 - b. Researchers must capture and handle pinnipeds in groups small enough so that all animals can be adequately monitored.

- c. Researchers must use sterile disposable needles and other sampling tools to the maximum extent practicable. Researchers must thoroughly disinfect (with a bacteriocidal/virucidal agent, in accordance with the product directions) and clean all non-disposable equipment between animals and, as needed, immediately prior to each use.
 - d. Surgical tag implants must be performed by a qualified veterinarian, under sterile conditions to the maximum extent practicable, and while animals are sedated using gas anesthesia.
 - e. Researchers must immediately cease research-related procedures if a pinniped is showing signs of acute or protracted alarm reaction or adverse reactions to drugs (e.g., overexertion, constant muscle tensions, abnormal respiration or heart rate) that may lead to serious injury, capture myopathy, other disease conditions, or death; and monitor and treat such signs as determined appropriate by the PI, a CI, or an attending veterinarian.
 - f. Researchers must ensure that pinnipeds that have been captured and/or anesthetized have an opportunity to recover prior to release without undue risk of drowning or injury from other animals.
 - g. In the event a pregnant female dies as a result of the research activities, both the female and the unborn pup shall be counted as research-related mortalities in Appendix 1 of this permit. If a lactating female dies as a result of the research activities and her dependent pup can be identified, researchers must immediately contact the NMFS Southwest Regional Stranding Network Coordinator [Phone: (562) 980-4017; Fax (562) 980-4027] and proceed as directed.
 - h. To the maximum extent practical without causing further disturbance of marine mammals, researchers shall monitor study sites following any disturbance (e.g., surveys or sampling activities) to determine levels of disturbance and if any marine mammals have been killed or injured or pups abandoned. Any observed serious injury to or death of a marine mammal is to be reported as indicated in Condition A.2 above. Any observed abandonment of a dependent marine mammal pup is to be reported as indicated in Condition B.4.g above.
 - i. Researchers must consult with the NMFS Southwest Regional Office, 501 W. Ocean Blvd., Suite 4200, Long Beach, CA 90802, regarding flipper tag color and must report, annually, to the NMFS Southwest Regional Office the range of tag numbers placed on all animals each year.
5. The Permit Holder must comply with all provisions specified in Attachment 1 of this permit for biological samples collected under the authority of this permit.

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C. Qualifications, Responsibilities, and Designation of Personnel

1. The following Researchers may participate in the conduct of the permitted activities in accordance with their qualifications and the limitations specified herein:
 - a. Principal Investigator – Dr. Sarah G. Allen;
 - b. Co-Investigators – Dr. William J. Sydeman, Julie Thayer, Derek Lee, Michelle Hester, Denise Greig, and
 - c. Research Assistants – any personnel identified by the Permit Holder or Principal Investigator and qualified to act pursuant to Conditions C.2, C.3, and C.4 of this permit.
2. Individuals conducting permitted activities must possess qualifications commensurate with their roles and responsibilities. The roles and responsibilities of personnel operating under this permit are as follows:
 - a. The Permit Holder is ultimately responsible for all activities of any individual who is operating under the authority of this permit. Where the Permit Holder is an institution/facility, the Responsible Party is the person at the institution/facility who is responsible for the supervision of the Principal Investigator.
 - b. The Principal Investigator (PI) is the individual primarily responsible for the taking, import, export and any related activities conducted under the permit. The PI must be on site during any activities conducted under this permit unless a Co-Investigator named in Condition C.1 is present to act in place of the PI.
 - c. Co-Investigators (CIs) are individuals who are qualified to conduct activities authorized by the permit without the on-site supervision of the PI. CIs assume the role and responsibility of the PI in the PI's absence.
 - d. Research Assistants (RAs) are individuals who work under the direct and on-site supervision of the PI or a CI. RAs cannot conduct permitted activities in the absence of the PI or a CI.
3. Personnel involved in permitted activities must be reasonable in number and essential to conduct of the permitted activities. Essential personnel are limited to:
 - a. Individuals who perform a function directly supportive of and necessary to the permitted activity (including operation of any vessels or aircraft essential to conduct of the activity);
 - b. Individuals included as backup for those personnel essential to the conduct of the permitted activity; and

- c. Individuals included for training purposes.
- 4. Persons who require state or Federal licenses to conduct activities authorized under the permit (e.g., veterinarians, pilots) must be duly licensed when undertaking such activities.
- 5. Permitted activities may be conducted aboard vessels, or in cooperation with individuals or organizations, engaged in commercial activities, provided the commercial activities are not conducted simultaneously with the permitted activities, except with written approval pursuant to Condition B.4.
- 6. The Permit Holder may request authorization from the Chief, Permits Division to add personnel to this permit as indicated below. The Permit Holder cannot require or receive any direct or indirect compensation in return for requesting authorization for such person to act as a PI, CI, or RA under the permit.
 - a. The Permit Holder or PI may add or remove CIs from the permit by submitting a written request to the Chief, Permits Division. Where the Permit Holder is an institution/facility, the Responsible Party may request a change of PI.
 - b. Requests to change the PI or add CIs must include a description of the individual's qualifications to conduct and oversee the activities authorized under this permit.

D. Possession of Permit

- 1. This permit cannot be transferred or assigned to any other person.
- 2. The Permit Holder and all other persons operating under the authority of this permit must possess a copy of this permit: when engaged in a permitted activity; when a protected species is in transit incidental to a permitted activity; and during any other time when any protected species taken under such permit is in the possession of such persons.
- 3. A duplicate copy of this permit must be attached to the container, package, enclosure, or other means of containment in which a protected species or protected species part is placed for purposes of storage, transit, supervision or care.

E. Reports

1. The Permit Holder must submit annual, final, and incident reports, and any papers or publications resulting from the research authorized herein to the Chief, Permits Division, Office of Protected Resources, NMFS, 1315 East-West Highway, Suite 13705, Silver Spring, MD 20910; phone (301) 713-2289; fax (301) 427-2521.
2. Written incident reports related to serious injury and mortality events or to exceeding authorized takes, must be submitted to the Chief, Permits Division within two weeks of the incident. The incident report must include a complete description of the events and identification of steps that will be taken to reduce the potential for additional research-related mortality or exceedence of authorized take.
3. An annual report must be submitted to the Chief, Permits Division by July 14 for each year the permit is valid, beginning in 2008. The annual report describing activities conducted during the previous permit year must follow the format in Appendix 2.
4. A final report must be submitted to the Chief, Permits Division within 180 days after expiration of the permit (October 12), or, if the research concludes prior to permit expiration, within 180 days of completion of the research. The final report must follow the format in Appendix 2 and summarize takes and activities over the life of the permit.
5. Research results must be published or otherwise made available to the scientific community in a reasonable period of time.

F. Notification and Coordination

1. The Permit Holder must provide written notification of planned field work to the appropriate Assistant Regional Administrator for Protected Resources at the address listed below. Such notification must be made at least two weeks prior to initiation of any field trip/season and must include the locations of the intended field study and/or survey routes, estimated dates of research, and names and roles of participants (i.e., all CIs and Research Assistants).

Southwest Region, NMFS, 501 West Ocean Blvd., Suite 4200, Long Beach, CA 90802-4213; phone (562) 980-4020; fax (562) 980-4027.

2. To the maximum extent practical, the Permit Holder must coordinate permitted activities with activities of other Permit Holders conducting the same or similar activities on the same species, in the same locations, or at the same times of year to avoid unnecessary disturbance of animals. The NMFS Southwest Regional Office may be contacted at the address listed above for information about coordinating with other Permit Holders.

G. Observers and Inspections

1. NMFS may review activities conducted pursuant to this permit. At the request of NMFS, the Permit Holder must cooperate with any such review by:
 - a. Allowing any employee of NOAA or any other person designated by the Director, NMFS Office of Protected Resources to observe permitted activities; and
 - b. Providing any documents or other information relating to the permitted activities.

H. Modification, Suspension, and Revocation

1. All permits are subject to suspension, revocation, modification, and denial in accordance with the provisions of subpart D [Permit Sanctions and Denials] of 15 CFR part 904.
2. The Director, NMFS Office of Protected Resources may modify, suspend, or revoke this permit in whole or in part:
 - a. In order to make the permit consistent with any change made after the date of permit issuance with respect to any applicable regulation prescribed under section 103 of the MMPA;
 - b. In any case in which a violation of the terms and conditions of the permit is found;
 - c. In response to a written request⁵ from the Permit Holder; and
 - d. If NMFS determines that the application or other information pertaining to the permitted activities (including, but not limited to, reports pursuant to Section E of this permit and information provided to NOAA personnel pursuant to Section G of this permit) includes false information; and

⁵ The Permit Holder may request changes to the permit related to: the objectives or purposes of the permitted activities; the species or number of animals taken; and the location, time, or manner of taking or importing protected species. Such requests must be submitted in writing to the Chief, Permits Division in the format specified in the application instructions.

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3. Issuance of this permit does not guarantee or imply that NMFS will issue or approve subsequent permits or amendments for the same or similar activities requested by the Permit Holder, including those of a continuing nature.

I. Penalties and Permit Sanctions

1. Any person who violates any provision of this permit, the MMPA, or the regulations at 50 CFR 216 is subject to civil and criminal penalties, permit sanctions, and forfeiture as authorized under the MMPA and 15 CFR part 904.
2. NMFS shall be the sole arbiter of whether a given activity is within the scope and bounds of the authorization granted in this permit. The Permit Holder must contact the Permits Division for verification before conducting the activity if they are unsure whether an activity is within the scope of the permit. Failure to verify, where NMFS subsequently determines that an activity was outside the scope of the permit, may be used as evidence of a violation of the permit, the MMPA, and applicable regulations in any enforcement actions.

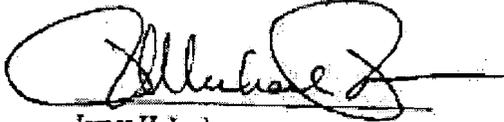
J. Acceptance of Permit

1. In signing this permit, the Permit Holder and Principal Investigator:
 - a. Agree to abide by all terms and conditions set forth in the permit, all restrictions and relevant regulations under 50 CFR Part 216, and all restrictions and requirements under the MMPA;
 - b. Acknowledge that the authority to conduct certain activities specified in the permit is conditional and subject to authorization by the Office Director; and

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c.

Acknowledge that this permit does not relieve the Permit Holder of the responsibility to obtain any other permits, or comply with any other Federal, State, local, or international laws or regulations.



James H. Locky
Director, Office of Protected Resources
National Marine Fisheries Service

4/9/2007
Date



William V. Sydeman, Ph.D.
Director of Marine Ecology, PRBO Conservation Science
Responsible Party

4-17-2007
Date



Sarah G. Allen, Ph.D.
Senior Science Advisor, National Park Service
Principal Investigator

4/17/07
Date

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POINT REYES DISPATCH

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