



MEMORANDUM FOR: F/PR – James H. Lecky
FROM: F/PR1 – P. Michael Payne
SUBJECT: Report on 13 applications for Scientific Research Permits for research on Steller sea lions and northern fur seals: Recommendation for Issuance

This memorandum summarizes processing and decision recommendations for 13 applications submitted for permits to conduct research on Steller sea lions (*Eumetopias jubatus*) and northern fur seals (*Callorhinus ursinus*) throughout their range in the United States. These 13 applications were processed concurrently, including a batched Notice of Receipt in the *Federal Register*. This memorandum is divided into three main sections: one summarizing general or overarching issues related to all 13 applications, one summarizing each of the 13 applications, and one including the rationale for recommending issuance of the permits.

Section I: General and Overarching Issues Common to All Applications

General Chronology

February 15, 2007	Applications published in <i>Federal Register</i> (72 FR 7420)
February 15, 2007	Applications distributed
March 21, 2007	Extension of comment period published in <i>Federal Register</i> (72 FR 13255)
April 17, 2007	Comments received from Mr. Andrew Wright (public comment)
April 30, 2007	Close of public comment period
May 1, 2007	The Humane Society of the United States comments received
May 1, 2007	USDA Animal & Plant Inspection Service comments received
May 2, 2007	Marine Mammal Commission comments received
May 4, 2007	Comments forwarded to applicants for response
May 17, 2007	Applicant responses to comments due

General Comments

Marine Mammal Commission

The Marine Mammal Commission (MMC) provided general comments and comments specific to each of the 13 applications. In general, the MMC stated that its recommendations and comments are intended to avoid unnecessary or unwarranted impacts to the species and to ensure the maximum net benefit is realized from the research. The full text of the MMC's comments is attached (Attachment #1). MMC comments specific to individual applications are summarized

Section I: General



in the individual application sections below, along with any responses to such specific comments.

In general, the MMC recommends approval of the permit applications subject to the following conditions—

1. The Service address the commission’s recommendations concerning the DPEIS for the proposed actions;
2. The Service appoint (1) implementation teams to develop implementation plans for the Steller sea lion recovery plan and northern fur seal conservation plan, and (2) a research review group to oversee and coordinate the combined activities of all the programs conducting research on these populations;
3. When required by the Animal Welfare Act, research proposed in each of the subject permit applications be reviewed and approved by Institutional Animal Care and Use Committees (IACUCs), and, confirmation of IACUC review and approval be required as part of the application process for all scientific research permits;
4. The Service require implementation plans and applicable permits to incorporate science-based methods for assessing the impact of research activities whenever there is a reasonable basis for concern about their impacts;
5. Each research permit applicant be required to report on related research activities in the previous year, including information on what research was conducted, the number of animals that were taken, methods used for assessing potential effects of the research on the subject animals and the affected populations and the effects observed, including the number of serious injuries and deaths that occurred, the results of post-capture/tagging/branding monitoring activities, and—if deaths occurred—the measures proposed to avoid or reduce the occurrence of such injuries and deaths in the future;
6. The Service establish and maintain a database on the various procedures (e.g., capture, anesthesia, instrument attachment, surgery) done on individually recognizable Steller sea lions and northern fur seals, and evaluate the information in that database to resolve uncertainties concerning the potential for adverse research effects; and
7. The use of general anesthesia be required for branding activities and similarly painful procedures, with adequate justification and specific authorization required in advance for any proposed exceptions.

PR Response to MMC general comments:

1. NMFS has prepared a Final Programmatic Environmental Impact Statement (PEIS) for Steller sea lion and northern fur seal research (NMFS 2007). In preparing the Final PEIS, NMFS reviewed the MMC’s comments on the Draft PEIS and made changes to the document. Please refer to Appendix C of the Final PEIS for summaries of the specific MMC comments and NMFS responses.
2. As outlined in Chapter 5 of the Final PEIS (NMFS 2007) and ROD (signed June 18, 2007), NMFS intends to convene an independent research “implementation team” with MMC oversight to assess the effectiveness of the research program.
3. NMFS currently encourages all applicants to submit with their applications a copy of the protocols approved by their IACUC. NMFS is considering promulgating a regulation that would require such. NMFS notes that compliance with the IACUC provisions of the Animal Welfare Act and implementing regulations is the responsibility of the permit

applicant, and enforcement of such compliance is under the jurisdiction of the U.S. Department of Agriculture's Animal and Plant Health Inspection Service.

4. As outlined in Chapter 5 of the Final PEIS and ROD, NMFS intends to require, as a condition of the permit, post-research activity monitoring to observe the potential effects of research activities. Results of the monitoring program will be assessed to determine what additional conditions might need to be implemented and what subsequent research actions at rookeries and haul outs should be permitted.
5. All permits will require the permit holder to submit annual reports summarizing the activities conducted under the permit in the previous year. These annual reports will be required to contain all the above information recommended by the MMC.
6. NMFS will investigate establishing a database for maintaining and evaluating the effects of research on individually recognizable Steller sea lions and northern fur seals. Such a database will require additional monetary and staff resources.
7. Where the permit applicant has demonstrated there will be appropriately qualified personnel available to properly administer anesthesia, NMFS permits will allow such. However, NMFS does not intend to require permit holders to use anesthesia for branding activities and similarly painful procedures if there are no personnel appropriately qualified to do so properly as this could endanger the health and welfare of the marine mammal.

U.S. Department of Agriculture's Animal & Plant Health Inspection Service

The Animal & Plant Health Inspection Service (APHIS) provided general comments and comments specific to each of the 13 applications. The full text of APHIS's comments is attached (Attachment #2). APHIS comments specific to individual applications are summarized below by application file number, along with any responses to such specific comments. APHIS's general comments are summarized as follows:

1. The study designs do not require and do not benefit from capture/release/recapture. As such, hot branding for permanent identification is not warranted.
2. If a study exists that requires hot branding (not considered humane), the length of time the branding takes, post procedure treatment and alleviation of pain, and other options must be considered. In the studies under review, there is no justification for using 4 digits, or for branding each digit alone.
3. No consideration has been made for post procedure treatment with antibiotics or pain relief has been addressed. All facilities would be required to have an approved protocol from their IACUC that has shown consideration of alternatives and use of methods that would alleviate discomfort, stress, and long-term complications. Topical antibiotic/anesthetic creme should be used post procedure.
4. The inclusion of statements about personnel being trained in a procedure does not exclude the PI or institution from following all tenets of the Veterinary Procedures Act in their States. A qualified veterinarian needs to be on site during all activities that involve veterinary procedures and drugs.
5. No consideration was given to proper recovery times for anesthesia.
6. Under the AWA, all marine mammal deaths require a necropsy performed by or under the direct supervision of a qualified veterinarian. This condition would be applicable during

research as well, as long as the animal was available. All applications that may result in accidental losses should address this issue.

7. While small surface skin biopsies may be acceptable without anesthesia under some conditions, proposals for blubber and muscle biopsies, some up to 2 ½ inches deep, constitute painful and invasive procedures and must be done under anesthesia. If local anesthesia is to be used, dosages should be given, and well as documented protocols for determination of effectiveness, including the waiting period for full effect.
8. The amount of blood expected to be taken at sampling, while below 10% of blood volume, are significantly high. Given the state of current laboratory methods, it seems that samples can be much smaller, as most tests no longer require 5 ml of serum anymore, more like 0.1 ml. Remember refinement and reduction – this can be applied to sampling as well.
9. All permit applications should include approved IACUC protocols for the proposed research. It is understood that NMML is in the process of establishing IACUC procedures, but all other applications should have functioning IACUCs and should include approval of the protocols.
10. As discussed above, all should address the potentially painful procedures and care of the animals.
11. All institutions and researchers where applicable must have approved protocols that mirror the applications before approval of the permits are given.
12. All methods need to be reviewed to minimize stress and discomfort for the animals and alternatives need to be explored, decisions justified. No animal should be kept over 24 hours. Food and water issues must be addressed if held more than a few hours.
13. Applicants identify that studies have already proven that certain methods are equivalent to the “gold standard” –deuterium(?) measures – for determining body composition. Therefore, it appears to be redundant and unnecessary for more than one method be used, increasing the handling and sedation/anesthesia. Only one method for determination of body composition should be used for each study. The intent of the studies is to monitor the animals, not compare methodologies. As an endangered species, these sea lions should be studied, not experimented on.
14. For all of the permit applications, removal of branding and assurance of appropriate use of veterinarians in the protocols, could lead to acceptable protocols.

PR Response to APHIS general comments:

1. The MMPA states that NMFS may issue a permit to an applicant who submits information indicating that the taking is required to further a bona fide scientific purpose. [16 U.S.C. 1374 Sec. 104(c)(3)(A)] The MMPA places the burden on the applicant to demonstrate that their proposed permit is consistent with the statute. Thus, NMFS forwarded the APHIS comments about the appropriateness or necessity of hot-branding to individual applicants with a request that they explain why their particular study cannot be accomplished without hot brands. Please refer to the individual applicant responses below.
2. As with question Number 1, NMFS forwarded the APHIS comment to individual applicants with a request that they explain the need for 4 digit brands and why each digit is applied separately. Please refer to the individual applicant responses below.
3. As with question Number 1, NMFS forwarded the APHIS comment to individual applicants with a request that they explain what considerations have been made for post-

procedure analgesia and antibiotics. Please refer to the individual applicant responses below. In addition, NMFS currently encourages all applicants to submit with their applications a copy of the protocols approved by their IACUC. NMFS is considering promulgating a regulation that would require such. NMFS notes that compliance with the IACUC provisions of the Animal Welfare Act (AWA) and implementing regulations is the responsibility of the permit applicant, and enforcement of such compliance is under the jurisdiction of the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS). NMFS disagrees that topical antibiotic should be applied post-procedure, particularly for free-ranging animals. There is no evidence such a one-time application of antibiotic would have any effect on preventing infection in free-ranging animals. However, there is evidence that indiscriminate or inappropriate use of antibiotics can have adverse environmental impacts such as contributing to drug-resistant bacteria. For animals in permanent or temporary captivity, such as the transient Steller sea lions at the Alaska SeaLife Center, the applicant has indicated animals would be treated for infections as appropriate.

4. All permits contain a condition specifying that 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 and another condition specifying that individuals conducting permitted activities must possess qualifications commensurate with their roles and responsibilities.
5. As with question Number 1, NMFS forwarded the APHIS comment to individual applicants with a request that they explain what considerations are made for recovery of animals from anesthesia versus the initial return to consciousness. Please refer to the individual applicant responses below.
6. The permits contain a condition requiring researchers to monitor animals post-research activity and record any detected effects, to the extent that such monitoring would not result in additional disturbance of animals. In the case of research-related mortalities, researchers would be encouraged to perform a necropsy provided retrieval of the carcass would not result in additional disturbance of marine mammals.
7. As with question Number 1, NMFS forwarded the APHIS comment to individual applicants with a request that they provide details about use of anesthesia for blubber and muscle biopsy, including dosages, how they determined the specific anesthetic/dosage would provide appropriate level of anesthesia, and how long they would wait post-delivery for the anesthetic to take effect. NMFS also requested applicants to explain why they would not use anesthesia if none was proposed in their application. Please refer to the individual applicant responses below.
8. As with question Number 1, NMFS forwarded the APHIS comment to individual applicants with a request that they explain why their specific studies require collection of the amount of blood requested in their application. Please refer to the individual applicant responses below.
9. NMFS currently encourages all applicants to submit with their applications a copy of the protocols approved by their IACUC. NMFS is considering promulgating a regulation that would require such. With the exception of NMML and ODFW, all applicants required to have their protocols reviewed by an IACUC have provided NMFS with copies of the approved protocols. One applicant, the North Pacific Universities Marine

Mammal Research Consortium, is not a U.S. citizen or operating out of a research facility as defined under the AWA and as such is not subject to the IACUC requirement. NMFS notes that compliance with the IACUC provisions of the AWA and implementing regulations is the responsibility of the permit applicant, and enforcement of such compliance is under the jurisdiction of the USDA APHIS.

10. As with question Number 1, NMFS forwarded the APHIS comment to individual applicants with a request that they explain measures that would be taken during and after potentially painful procedures. Please refer to the individual applicant response below.
11. Please refer to response to Questions 3 and 9 above. Regarding APHIS statement that applicants must have approved protocols that mirror the applications before approval of the permits are given, NMFS reiterates that compliance with the IACUC provisions of the AWA and implementing regulations is the responsibility of the permit applicant, and enforcement of such compliance is under the jurisdiction of the USDA APHIS. NMFS does not have the authority to enforce compliance with this statute.
12. As with question Number 1, NMFS forwarded the APHIS comment to individual applicants with a request that they discuss methods they would use to minimize stress and discomfort for the animals, alternatives explored, why animals need to be kept over 24 hours, and what provisions would be made for food and water during that holding time. Please refer to the individual applicant response below. Note that only two applicants have proposed holding animals for a day or longer: the Alaska SeaLife Center proposes to hold juvenile Steller sea lions for up to 3 months, and the NPUMMRC proposes to remove northern fur seal pups from the wild for permanent captivity.
13. As with question Number 1, NMFS forwarded the APHIS comment to individual applicants with a request that they explain why it is necessary to use multiple methods on the same animal for determining body composition and why comparison of the methods cannot be performed using a non-ESA listed species. Please refer to the individual applicant responses below.
14. As discussed in the response to Question 1 above, it is the applicant's responsibility to demonstrate in their application the appropriateness or necessity of hot-branding. Where applicants have justified the need for this procedure relative to bona fide scientific research, NMFS would not require removal of the procedure. Similarly, NMFS does not currently (by statute or regulation) specifically require use of veterinarians under a permit but notes that state laws may limit performance of certain procedures or administration of certain drugs to licensed veterinarians. In those cases, it is the responsibility of the permit holder to comply with applicable state laws regarding veterinary medicine. NMFS does not have the authority to enforce compliance with state laws. All permits contain the following two conditions regarding compliance with state and local laws and other federal laws not under NMFS jurisdiction:
 - a. Condition C.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.*
 - b. Condition J.1.c. *In signing this permit, the Permit Holder acknowledges 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.*

The Humane Society of the United States

The Humane Society of the United States (HSUS) provided general comments and comments specific to each of the 13 applications. The full text of HSUS's comments is attached (Attachment #3). HSUS comments specific to individual applications are summarized below by application file number, along with any responses to such specific comments. The following is a summary of the HSUS's general or overarching comments:

1. Not all requested activities were authorized in the DEIS.
2. Not all permittees appear to have complied with conditions of their previous permits.
3. Not all permit applicants properly describe the hypotheses that their research will test or the specific contribution of their research to the recovery or conservation plans.
4. Not all proposed procedures meet the MMPA's standard for humane research.
5. Permit applicants request takes in categories not analyzed in the DEIS.
6. Use of darted Telazol appears inappropriate.
7. The regulations require the Final EIS to be available during the comment period.
8. Because the total effect of proposed activities, which are the subject of these comments, was not properly analyzed under the DEIS and the agency has not fully analyzed the full environmental impact of these permits, the proposed research activities cannot be permitted. Further, pursuant to the MMPA's regulations, the Final NEPA documentation must be made available to the public before the comment period. NMFS's inadequate Draft EIS will not suffice.
9. Given the inadequacy of NMFS Draft EIS and unavailability of a Final EIS, we recommend that no permit be granted until NMFS can complete a full and final analysis of the impacts of these permits on the stocks and the environment. Further, we request that before considering granting these permits the Agency ensure that all required information has been submitted, the research is not duplicative or will otherwise not result in information essential to the species' survival, and the permit will not "operate to the disadvantage" of any species.

PR Response to HSUS general comments:

1. The DEIS, as well as the Final EIS, are intended to be documents that inform NMFS' decisions regarding permit issuance. As the EIS is programmatic, and intended to serve as a decision guidance tool for the next 10 years including activities which have yet to be requested, it does not list or evaluate every possible research method. Rather, it provides a framework by which individual permit applications could be evaluated regarding potential environmental impacts of permit issuance.
2. Applicants have submitted all requisite permit reports due at this time.
3. The applicants have provided information in support of their assertions that their research is bona fide and will contribute to objectives in the species' recovery or conservation plan.
4. The applicants have provided information in support of their proposed methods relative to their specific study objectives.
5. NMFS has compared the information in each of the applications against the tables in the Final EIS. Where applicants did not specify an age class (e.g. applicant requested "all ages") or where the request in the application otherwise spans more than one category in the EIS (e.g. "disturbance during scat collection, capture, and observations" could

include both “researcher presence among animals” and “researcher presence in view of animals”), NMFS calculated the predicted mortality conservatively, assuming the “worst case scenario.” See Attachment #4 for a summary of the calculations and assumptions made in comparing permit applications to the mortality tables in the Final EIS.

6. The applicants have provided additional information in support of the safety of the use of Telazol for capture/sedation of lactating and pregnant females (see Attachment #7 with responses from ADF&G (File No. 358-1888)). However, NMFS is not proposing to permit use of Telazol to capture or restrain adult female Steller sea lions that may be pregnant or lactating. As indicated in the Final Programmatic Environmental Impact Statement for Steller sea lion and northern fur seal research (NMFS 2007), additional studies are needed to demonstrate the safety of Telazol sufficient to allow its use in reproductive age female Steller sea lions.
7. NMFS has made the Final PEIS available to the public prior to making any decisions on issuance of the 13 permits.
8. NMFS has completed a Final PEIS, which has been made available to the public. In response to comments received on the Draft PEIS, the Final PEIS contains additional information and clarifications about potential environmental impacts.
9. NMFS has completed a Final PEIS and determined that all 13 applications for which permits would be issued are consistent with the analyses in the Final PEIS. As discussed in Section III of this memo, PR1 has determined that the proposed permits are consistent with all applicable provisions of the MMPA and ESA.

Mr. Andrew Wright, member of the public

The full text of Mr. Wright’s comments is attached (Attachment #5). The following is a summary of those comments:

1. Mr. Wright supports issuance of permits for various observational research, especially brand re-sighting efforts and permits for disentangling animals from fishing gear and other debris, including disturbance associated with that activity.
2. Mr. Wright stated that additional disturbance should be justified in terms of meeting a conservation goal or minimized where possible.
3. Mr. Wright recommended that invasive work, including that involving short-term captivity, should be highly justified in terms of conservation goals, limited to the minimum necessary, and the methodology be well structured and appropriate to a well-defined hypothesis.
4. Mr. Wright supports issuance of the permit proposed by Kate Wynne (File No. 1049-1886) for Steller sea lions because the study is well justified in the application.
5. Mr. Wright opposes issuance of permits for bringing animals into permanent captivity in general, but was in support of issuance of the permit proposed by NPUMMRC (File No. 715-1883) for northern fur seals because the study is very well justified and involves only a small number of animals.

PR Response to Mr. Wright’s comments:

NMFS appreciates the opinions expressed by Mr. Wright but notes that he did not raise any substantive issues that need be considered in the agency’s decision making. Individual applicants have provided information in their applications in support of their proposed activities,

including justifications for methods and sample sizes. Mr. Wright's comments do not challenge any specific information provided by applicants in support of their permit requests.

Federal Statutes Applicable to Permit Issuance

Marine Mammal Protection Act (MMPA): The MMPA is applicable to all 13 applications. The MMPA prohibits takes of all marine mammals in the U.S. (including territorial seas) with a few exceptions. Permits for bona fide scientific research on marine mammals are issued pursuant to section 104 of the MMPA. NMFS has sole jurisdiction for issuance of such permits for all species of cetacean and all pinnipeds except walrus. This section of the MMPA specifies that NMFS may issue a permit to an applicant who submits with their permit application information indicating that the taking is required to further a bona fide scientific purpose. The MMPA also specifies that an applicant must demonstrate to NMFS that the taking will be consistent with the purposes of the MMPA and applicable regulations. If an applicant has requested lethal taking of a marine mammal, the MMPA further requires that applicants demonstrate that a nonlethal method of conducting research is not feasible. In issuing a permit, NMFS must find that the manner of taking is "humane" as defined in the MMPA. In the case of proposed lethal taking of a marine mammal from a stock listed as "depleted" NMFS must also determine that the results of the research will directly benefit the species or stock, or otherwise fulfill a critically important research need. NMFS has promulgated regulations to implement the permit provisions of the MMPA (50 CFR 216) and has produced OMB-approved application instructions that prescribe the procedures (including the form and manner) necessary to apply for permits. All applicants must comply with these regulations and application instructions in addition to the provisions of the MMPA.

Fur Seal Act (FSA): The FSA is applicable to all applications requesting takes of northern fur seals in the Pribilof Islands. The FSA requires the Secretary to conduct research on North Pacific fur seal resources as necessary for the U.S. to meet its obligations under the Interim Convention on the Conservation of North Pacific Fur Seals. The Secretary must permit, subject to necessary terms and conditions, the taking of fur seals for educational, scientific or exhibition purposes. [16 U.S.C. § 1154]

Endangered Species Act (ESA): The ESA is applicable to all permits involving takes of Steller sea lions for scientific purposes. Permits for scientific purposes are issued pursuant to Section 10(a)(1)(A) of the ESA, and must also be consistent with Section 10(d) of the ESA. Section 10(d) requires NMFS to find that exceptions (permits) granted under subsection 10(a)(1)(A) were applied for in good faith; if granted and exercised, will not operate to the disadvantage of endangered species; and will be consistent with the purposes and policy of section 2 of the ESA. NMFS has sole jurisdiction for issuance of such permits for all species of cetacean and all pinnipeds except walrus.

In addition to the requirements of Section 10 of the ESA, NMFS issuance of permits is a federal action subject to the interagency cooperation requirements of Section 7 of the ESA. Section 7 requires federal agencies to use their authorities in furtherance of the purposes of the ESA by

carrying out programs for the conservation of endangered and threatened species. NMFS is required to insure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of any threatened or endangered species or result in destruction or adverse modification of habitat for such species.

National Environmental Policy Act (NEPA): NEPA is applicable to NMFS issuance of permits pursuant to the MMPA and ESA, which constitute a major federal action. Scientific research permits are, in general, categorically excluded from the requirement to prepare an Environmental Assessment (EA) or Environmental Impact Statement (EIS) (NOAA Administrative Order Series 216-6, May 20, 1999). However, NMFS prepared a Programmatic Environmental Impact Statement (PEIS) to facilitate a more thorough assessment of potential impacts of the research program on Steller sea lions and northern fur seals (NMFS 2007). In a Record of Decision, signed on June 18, 2007, NMFS stated that it has selected the Preferred Alternative (Alternative 4: Research Program with Full Implementation of Conservation Goals) as its preferred strategy for the issuance of grants and permits for scientific research on Steller sea lions and northern fur seals. NMFS has determined that the implementation of the Preferred Alternative will be limited in duration and scope at this time such that it limits research permits to three years (effectively three summer field seasons between June 2007 to August 1, 2009) while engaging in a program review as outlined in the ROD. Upon completion of the program review (no later than December 2008), NMFS will adopt policy and guidance to improve the implementation of the Steller sea lion and northern fur seal research program. Until such policy and guidance is adopted, NMFS will not process any amendments to research permits issued pursuant to the Preferred Alternative, nor will it issue new permits for Steller sea lion and northern fur seal research.

National Marine Sanctuaries Act (NMSA): The NMSA authorizes the Secretary of Commerce to designate and manage areas of the marine environment with special national significance. The National Marine Sanctuary Program, operating under the NMSA and administered by NOAA's National Ocean Service (NOS) has the authority to issue special use permits for research activities that would occur within a National Marine Sanctuary. Obtaining special use permits is the responsibility of individual researchers. However, as a courtesy, the Office of Protected Resources consults with NOS when proposed research would occur in or near a National Marine Sanctuary. None of the proposed permits would occur within any of the 13 designated National Marine Sanctuaries or the Northwestern Hawaiian Islands Marine National Monument thus there was no consultation with NOS for any of the permits.

Convention on International Trade in Endangered Species of Wild Fauna (CITES): CITES is an international agreement between governments with the goal of ensuring that international trade in specimens of wild animals and plants does not threaten their survival. All import, export, re-export and introduction from the sea of species covered by CITES has to be authorized through a licensing system. In the U.S., the Fish and Wildlife Service is the Management Authority for CITES. Obtaining CITES permits is the responsibility of individual researchers. NMFS notes that none of the species authorized to be imported/exported in the subject permits are listed on Appendix I or II of the CITES.

Magnuson-Stevens Act: Section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act requires NMFS to complete an Essential Fish Habitat (EFH) consultation for any action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken by the agency that may adversely affect EFH. Consultation is required for renewals, reviews or substantial revisions of actions. The Office of Protected Resources has determined that the activities proposed in the permits will not impact designated EFH. As a result, no consultation was conducted with NMFS Office of Habitat Conservation.

Section II: Individual Permit Applications

File No. 782-1889: National Marine Mammal Laboratory

Abstract – File No. 782-1889

The National Marine Mammal Laboratory (NMML), NMFS, Seattle, Washington (Principal Investigator: John Bengtson) requests a 5-year permit to measure Steller sea lion population status, vital rates, foraging behavior, and condition in North Pacific Ocean areas including California, Washington, Oregon, and Alaska. Annually in the western Distinct Population Segment (DPS), up to 73,000 sea lions may be exposed to aerial surveys, 27,000 to rookery based activities, and 23,000 to incidental activities. Up to 1,280 could be captured annually, with up to 630 having blood, skin and swab samples collected, 580 hot branded, and up to 180 blubber and lesion biopsied, tooth and vibrissa removed, be ultrasonically imaged, and subject to stomach intubation or enema. Instruments may be attached on up to 280 per year, and 880 per year may receive a non permanent tag or mark. Annually in the eastern DPS, up to 26,000 may be exposed to aerial surveys, and 5,000 to incidental activities. Up to 12 could be captured per year, and have blood, skin, blubber, fecal, and culture samples collected, a tooth and vibrissa removed, hot brand, tag or non permanent mark applied, and have an instrument attached. NMML requests authorization for up to 10 research-related mortalities of Steller sea lions per year (not to exceed 5 per year in the western DPS). Up to 5,000 harbor seals (*Phoca vitulina richardsi*) and 15,000 northern fur seals may be disturbed per year incidental to activities in Alaska. Up to 3,000 California sea lions (*Zalophus californianus*) and 200 harbor seals may be incidentally disturbed per year along the U.S. west coast.

Chronology – File No. 782-1889

December 1, 2006	Date of application
December 5, 2006	Application received incomplete
December 22, 2006	Additional information requested from applicant
January 12, 2007	Revised application received
May 17, 2007	Applicant responses to public comments received

Comments – File No. 782-1889

MMC Comments on File No. 782-1889

In addition to their general comments on all 13 applications (summarized in Section I above), the MMC submitted the comments and recommendations specific to File No. 782-1889, which are summarized here:

1. It is not clear whether anesthesia also will be used in branding older pups, juveniles, and adults.
2. We recommend that every precaution be taken when using Telazol and that only veterinarians and biologists with significant experience in darting marine mammals be authorized to conduct activities involving its use.
3. This and other applicants proposing to chemically sedate adult female Steller sea lions by darting, should identify the pup of an adult female sea lion that is targeted for darting, and

after she is darted, observe the pup closely or place it in a portable pen until the procedure(s) on the mother are completed.

4. The application should discuss the potential effects of Telazol on the nursing pups of females injected with the drug. If adverse effects may reasonably be expected, appropriate research should be conducted to resolve uncertainties concerning possible effects and to develop methods to mitigate those effects, as appropriate.
5. A curriculum vitae for the veterinarian(s) who would be involved in the research should be provided if one is not already on file with the Permits Office.
6. The applicants should clarify what portion of time animals captured on floating platforms will be allowed to come and go from the platform, the maximum duration that they will be held on the closed platform, the maximum time that they will be maintained in holding cages before research procedures are initiated, what would be done to prevent their overheating, and why alternative capture or research protocols that require shorter holding times are impractical.
7. Insufficient information is provided concerning the proposed short- and long-term monitoring of animals, particularly mother/pup pairs, after release.

Responses to MMC comments on File No. 782-1889

The MMC's comments were forwarded to the applicant for response. The applicant provided responses, which are attached (Attachment #6). Regarding MMC's comments about Telazol, NMFS is not proposing to permit use of Telazol to capture or restrain adult female Steller sea lions that may be pregnant or lactating. As indicated in the Final Programmatic Environmental Impact Statement for Steller sea lion and northern fur seal research (NMFS 2007), additional studies are needed to demonstrate the safety of Telazol sufficient to allow its use in reproductive age female Steller sea lions.

APHIS comments on File No. 782-1889

APHIS submitted comments and recommendations applicable to the 13 applications in general as summarized in Section I above. APHIS also provided the following comments specific to File No. 782-1889:

1. The application should include specifics, not generalities. Since there is no IACUC in place yet, detailed information is needed so that [PR1] can adequately review.
PR1 added the following clarification before forwarding to the applicant: Please describe the specifics of the proposed activities re: locations, numbers of animals, etc. as it relates to the requirements of the AWA.
2. Tooth extraction has not been justified, as there are no aspects of the study that require precise aging.
PR1 added the following clarification before forwarding to the applicant: Please explain why your study requires the precision age determination associated with tooth extraction rather than relying on other methods for grossly estimating age.
3. Any decision on the use of anesthesia needs to be left to the veterinarian, not the PI, unless he/she is a qualified veterinarian.
PR1 added the following clarification before forwarding to the applicant: Please clarify whether or how a qualified veterinarian is involved in the proposed activities.

Responses to APHIS comments on File No. 782-1889

APHIS's general comments relevant to activities proposed by NMML, and any comments specific to File No. 782-1889, were forwarded to applicants for response. The applicant provided responses, which are attached (Attachment #6).

HSUS comments on File No. 782-1889

In addition to their general comments on all 13 applications (summarized in Section I above; see also Attachment #3), the HSUS submitted the comments and recommendations specific to File No. 782-1889, which are summarized as follows:

1. The information in the application for location of many activities generally states that sampling is "west of 144° W, AK" or "WA, OR and CA" which is not helpful in demonstrating that sampling is systematic, robust and non-duplicative in nature.
2. The application does not adequately discuss plans for resighting effort for previously marked animals or considerations for when studies require more than a one-time sampling of an animal's body condition.
3. NMML states that it will notify the regional office at least one month prior to field work. However other applicants have stated that they plan to determine sampling areas several months in advance, making it difficult for this applicant to avoid or help others avoid duplicate sampling or unnecessary disturbance.
4. The NMML never explains why both aerial surveys and drive counts of animals are deemed necessary to collect data for abundance and trends in population.
5. Given that this applicant and others use categories for sampling that are different than those in the DEIS, we are not clear how takes will be reported relative to understanding whether impacts are within the estimates used/approved by the DEIS.
6. The summary chart accompanying the application (Table 1) inappropriately lumps all activities related to captures including "physical or chemical" restraint. It is important to know which animals will receive anesthesia and which will not as it relates to MMPA requirements that method of taking be humane.
7. This application provides assurances that branding is not likely to lead to direct or indirect mortality but fails to mention results of an Oregon study referenced earlier in the text. Further, we do not see plans for extended monitoring of animals to ascertain their fate.
8. It is inappropriate to prevent analysis of impacts of a permit by failing to specify the "criteria for each procedure" in advance.
9. NMML's proposal to attach VHF transmitters to pups as young as 5 days of age (paragraph (i)) seems inappropriately risk prone and it is not clear why it is necessary to instrument pups this young.
10. Although the applicants cite a study done in Oregon to determine post-branding survival, they did not provide results, which showed that branded pups appeared to be adversely affected.
11. The use of darting with Telazol should not be allowed.
12. The applicants wish to use deuterated water which was not discussed or analyzed for impact in the DEIS and should not be permitted. Subjecting animals to subcutaneous needles required by BIA may also be inappropriate or unnecessary.
13. The applicant does not explain why some procedures are slated for use only in Western DPS Steller sea lions whereas other procedures are used on both.

14. The discussion of mortalities appears limited and omits reference to documents submitted to U.S. District Court as part of litigation on Steller sea lion permit issuance in 2005. This further highlights why the regulations require that a Final EIS be available to the public during the comment period.
15. There is a discrepancy between the text and tables regarding number of requested mortalities, which should be clarified.
16. The applicants state that capture related myopathy has not been observed in pinnipeds, yet by the DEIS' own admission, there has been virtually no study of effects of intrusive capture and sampling studies, so it is disingenuous to presume that it is not a very real risk.
17. The section in the application dealing with NEPA compliance states that NMFS does not have an IACUC under which research needs to be approved to guarantee compliance with the AWA. But it should.
18. Much that is proposed under this permit involves the use of novel capture techniques, the use of protocols not assessed in the DEIS, targeting age classes or sexes not differentiated in the DEIS and the use of techniques that arguably do not comply with the MMPA strictures on humane research. As such, this permit should not be granted at this time.

Responses to HSUS comments on File No. 782-1889

HSUS comments specific to File No. 782-1889, were forwarded to applicants for response. The applicant provided responses, which are attached (Attachment #6). Regarding HSUS's comments about Telazol, NMFS is not proposing to permit use of Telazol to capture or restrain adult female Steller sea lions that may be pregnant or lactating. As indicated in the Final Programmatic Environmental Impact Statement for Steller sea lion and northern fur seal research (NMFS 2007), additional studies are needed to demonstrate the safety of Telazol sufficient to allow its use in reproductive age female Steller sea lions.

File No. 358-1888: Alaska Department of Fish & Game

Abstract – File No. 358-1888

The Alaska Department of Fish and Game (ADF&G), Division of Wildlife Conservation, Juneau, Alaska (Principal Investigator: Dr. Lorrie Rea), requests a 5-year permit to continue investigating the various hypotheses for the decline or lack of recovery of Steller sea lions in Alaska. The research covers a variety of activities including incidental disturbance during aerial surveys (up to 20,000 individuals per year in the eastern DPS), disturbance of animals on rookeries and haulouts during brand resighting surveys (up to 25,000 individuals annually in the eastern DPS and up to 5,000 individuals annually in the western DPS), and incidental to scat collection, capture for instrument attachment, physiological research and sample collection (up to 15,000 individuals in the eastern DPS and 2,000 in the western DPS per year). Up to 800 pups would be hot branded per year for long-term demographic and distribution studies. Up to 280 older animals would be captured per year for physiological assessment, with attachment of scientific instruments to investigate foraging ecology and diving behavior on up to 95 per year. ADF&G requests authorization for up to 10 research-related mortalities of Steller sea lions per year (not to exceed 5 per year in the western DPS). Harbor seals, northern fur seals, and California sea lions may be disturbed incidentally during the course of this research due to proximity of isolated individuals to the Steller sea lion study area. Field work will take place during all seasons of the year and throughout the range of Steller sea lions in Alaska (both eastern and western DPS).

Chronology – File No. 358-1888

December 1, 2006	Date of application
December 8, 2006	Application received incomplete
December 22, 2006	Additional information requested from applicant
January 12, 2007	Revised application received
May 17, 2007	Applicant responses to public comments received
May 29, 2007	Applicant provided additional clarifications to application following discussions with NMML and PR1 regarding take allocations

Comments – File No. 358-1888

MMC Comments on File No. 358-1888

In addition to their general comments on all 13 applications (summarized in Section I above), the MMC submitted the following comments and recommendations specific to File No. 358-1888:

1. The application on page 14 states that newborns will be branded, but on page 23 states that pups under 20 kg or with an umbilicus will not be branded. This apparent inconsistency needs to be resolved.
2. Information concerning the total number of animals, by age group, that died during research activities, the circumstances surrounding those mortalities, and what steps, if any, are proposed to reduce the number of mortalities during future research needs to be provided.

3. The application does not, but should, discuss the potential effects of Telazol and other proposed drugs on the nursing pups of females on which the drug(s) will be administered.
4. Additional information should be provided concerning the proposed short- and long-term monitoring of animals to allow reviewers to evaluate whether monitoring will be sufficient to assess the effects of branding/handling on the subject animals.

Responses to MMC comments on File No. 358-1888

The MMC's comments were forwarded to the applicant for response. The applicant provided responses, which are attached (Attachment #7). Regarding MMC's comments about Telazol, NMFS is not proposing to permit use of Telazol to capture or restrain adult female Steller sea lions that may be pregnant or lactating. As indicated in the Final Programmatic Environmental Impact Statement for Steller sea lion and northern fur seal research (NMFS 2007), additional studies are needed to demonstrate the safety of Telazol sufficient to allow its use in reproductive age female Steller sea lions.

APHIS comments on File No. 358-1888

APHIS submitted comments and recommendations applicable to the 13 applications in general as summarized in Section I above. APHIS did not provide additional comments specific to File No. 358-1888.

Responses to APHIS general comments for File No. 358-1888

APHIS's general comments relevant to activities proposed by ADF&G were forwarded to applicants for response. The applicant provided responses, which are attached (Attachment #7).

HSUS comments on File No. 358-1888

In addition to their general comments on all 13 applications (summarized in Section I above; see also Attachment #3), the HSUS submitted the comments and recommendations specific to File No. 358-1888, which are summarized as follows:

1. The section on determination of sample sizes does not appear to be reflected in the summary charts, nor is it adequately explained in the text. There should also be a discussion of why the capture of an unknown (potentially small) number of females is a sufficient substitute for a sample size of 300 as dictated by the branding workshop that they cite.
2. On page 7, the applicants state they will coordinate with two other permittees engaged in capture activities. There should be coordination with all permittees.
3. With regard to capture and restraint, the varied verbiage and the summary charts make it impossible to determine whether animals are receiving proper sedation and/or analgesia for branding and other potentially stressful and painful procedures.
4. It is not clear that all captured animals will receive anesthesia.
5. This applicant proposed both flipper tagging and branding. Can the applicant discuss why they feel this duplicative procedure is necessary?
6. With regard proposed darting of animals with Telazol, we reiterate our comment made under the NMML permit regarding deaths of darted animals. It should not be allowed.
7. The discussion of mortality omits discussion of the paucity of postprocedure monitoring. We reiterate our comments on the inadequate accounting of incidental mortality that we provided on the NMML permit, as the verbiage here is virtually identical.

8. The discussion of “pain and suffering” omits information on the nature and degree of pain that is contained in the DEIS and in information provided by applicant Trites who proposes to study manifestations and mediation of pain and stress. There is also no acknowledgement of the general lack of post-procedure monitoring that is admitted in the DEIS, nor its effect on understanding of levels of indirect mortality.

Responses to HSUS comments on File No. 358-1888

HSUS comments specific to File No. 358-1888, were forwarded to applicants for response. The applicant provided responses, which are attached (Attachment #7). Regarding HSUS’s comments about Telazol, NMFS is not proposing to permit use of Telazol to capture or restrain adult female Steller sea lions that may be pregnant or lactating. As indicated in the Final Programmatic Environmental Impact Statement for Steller sea lion and northern fur seal research (NMFS 2007), additional studies are needed to demonstrate the safety of Telazol sufficient to allow its use in reproductive age female Steller sea lions.

File No. 715-1885: North Pacific Universities Marine Mammal Research Consortium

Abstract – File No. 715-1885

The North Pacific Universities Marine Mammal Research Consortium (Principal Investigator, Dr. Andrew Trites), University of British Columbia, Vancouver, B.C., Canada, requests a 5-year scientific research permit to test various hypotheses for the decline of Steller sea lions in Alaska.

The research would result in disturbance of Steller sea lions by the following activities: behavioral and demographic observations, scat collection, collection of carcasses or parts of carcasses, and aerial/boat surveys and camera maintenance. In conjunction with branding conducted by other permit holders the applicant would also conduct a 2-year study to assess pain and distress associated with hot-branding of Steller sea lions. Pain response would be measured using respiration rate, cortisol concentrations, body temperature, blood pressure, and using behavioral elements including movements and vocalizations.

Chronology – File No. 715-1885

December 1, 2006	Date of application
January 15, 2007	Application received complete
May 17, 2007	Responses to public comments received
May 24, 2007	Applicant discussed take numbers and mortality estimates with Brian Fadely, NMML

Comments – File No. 715-1885

MMC Comments on File No. 715-1885

In addition to their general comments on all 13 applications (summarized in Section I above), the MMC submitted comments specific to File No. 715-1885, which are summarized here:

1. Does the [branding] study focus on whether the use of a local anesthetic and post-operative analgesic contribute to the reduction of pain and distress in post-branded animals?
2. The applicant should provide additional information concerning how blood collection will occur without subjecting animals to additional stress. He should also further describe how the catheter would be placed and monitored.
3. The applicant should describe what monitoring measures have been and will be used to determine whether mothers and pups reunite.
4. The applicant provides additional information concerning the measure that will be taken to monitor animals being maintained in a fenced recovery area to prevent animals from being wedged in cracks in rocks or suffocated in pile-ups.

Responses to MMC Comments on File No. 715-1885

The MMC's comments were forwarded to the applicant for response. The applicant provided the following responses:

1. This understanding is correct. The aim of Activity 1 is to develop objective pain assessment methods for Steller sea lions and apply these methods in identifying and reducing potential pain during hot-iron branding with the use of anesthetics and analgesics. The research proposed in this permit application will be conducted in collaboration and coordination with

other groups or agencies (ASLC, ADF&G, ODFW and NMML). We are not requesting permission to brand Steller sea lions, but to assess the pain and stress associated with such procedures (Activity 1). The actual branding, administration of anesthesia, and veterinary care will be conducted by ADF&G, ASLC, ODFW or NMML (according to the permits they have applied for). Activity 1 will only occur if ADF&G, ASLC, ODFW or NMML receive permits to brand individuals and are able to accommodate the research needs listed in our permit.

2. The purpose of Activity 1 is to objectively assess pain and stress associated with hot-iron branding to ensure the most humane method is employed when permanently marking Steller sea lions. To objectively measure pain and stress, a combination of both physiological and behavioral measures should be collected. These could, for example, include stress hormones, heart rate, vocalizations, and time spent attending to wound. Glucocorticoids are known stress hormones that can be collected from blood, feces, or saliva.

Stress due to capture and branding will likely occur, however the recovery period should not introduce any additional stress. In order to reduce stress during the recovery period, the holding pens will be located away from the branding area. There will only be 4 animals per recovery area.

Approximately 100 animals are expected to be branded during an 8 hour period each day. We are requesting to include the first 16 animals of each day in our study to allow for a 5-6 hour recovery period for those 16 individuals where they can be monitored while branding continues on the rookery. Fecal samples require a variable passage time of between 5-98 hours from the time of the known stressor (Hunt *et al.* 2004). Since we cannot guarantee the passage of multiple fecal samples from each individual in our 5-6 hour observation period, fecal samples will not be sufficient to measure glucocorticoid levels. To our knowledge, salivary cortisol has not been validated in Steller sea lions and requires the same amount of human interaction as blood sampling to be collected.

The level of stress induced by additional (post-branding) blood sampling will be controlled in two ways: using a control (non-branded) group of animals, and minimizing handling for subsequent blood sampling. For the former, we believe that the stress of additional handling will be minimal compared to the potential stress of the branding procedure. For the latter, a catheter will be inserted by the attending veterinarian while the animal is anesthetized to reduce the amount of physiological and psychological stress that may be present due to repeated blood sampling. The catheter will be placed in either the flipper vein or the caudal gluteal vein to eliminate multiple venipunctures. The area to be sampled will be thoroughly disinfected and only new, clean, sterile needles will be used.

All animals included in Activity 1 will be consistently monitored. If at any point in the observation recovery period an animal acts unusually distressed, compared to the other individuals, the attending veterinarian will make the decision to terminate the experiment, remove the catheter and/or release the animal.

3. Release of the 16 individuals from Activity 1 will occur in the same manner as the remaining branded individuals for that day. Prior branding research has included brand re-sight trips, in which mothers and branded pups have been seen together. ADF&G and NMML have applied for permits to conduct brand re-sight trips where the evaluation of pup survival can be calculated (see NMML and ADFG 2007 permit applications for details).

Although there are no current peer-reviewed publications specifically addressing mother/pup

reunion time after branding, a recent unpublished study has shown that approximately 60% of the pups had reunited with their mothers within 2 hours 15 minutes after branding, and less than 24 hours after branding greater than 80% has reunited (ASLC, pers. comm. 2007). Ono (1972) reported an average reunion time for Steller sea lions (mother/ pup) of 8 minutes. However, pups are regularly without their mothers when mothers leave their young to forage, with such trips lasting up to 2.3 days (Trites and Porter 2002, Maniscalco et al. 2006).

4. Only 4 individuals will be grouped together in the open area holding pen after branding to reduce the chance of pups piling up on each other. Fencing will be placed in an area that is free of major cracks, crevices, and water pools to avoid pups from being wedged in the cracks or injured. The fenced area will be small, include only 4 animals, and will be constantly monitored by a researcher who is assigned to collect behavioral data on those 4 individuals until their release. At any point in time if the observer notices one of the four animals in distress, appropriate actions will be taken to ensure the health and safety of the sea lion pup, to be assessed by the attending veterinarian and may include the release of the animal.

APHIS Comments on File No. 715-1885

APHIS submitted comments and recommendations applicable to the 13 applications in general as summarized in Section I above. APHIS provided the following comments specific to File No. 715-1885:

1. No consideration was given to proper recovery times for anesthesia.
2. APHIS commented on the amount of blood requested for sampling.

Responses to APHIS Comments on File No. 715-1885

The applicant was forwarded APHIS' comments and provided the following responses:

1. Our proposed research is not asking to directly administer anesthesia or to brand animals. We are asking permission to assess the pain and stress associated with such procedures. The actual branding, administration of anesthesia, and veterinary care would be conducted by the ADF&G, ALSC, ODFW or NMML (through separate permits that they have requested).

The use of isoflurane as an anesthetic is widely accepted and used with Steller sea lion research and health assessment procedures (including ASLC, ADF&G, ODFW and NMML). Administration and monitoring of anesthesia will be conducted by trained personnel from the collaborating group (ASLC, ADF&G, ODFW or NMML) as apart of their health assessment and branding protocol. Time spent under anesthesia is less than one hour, and is typically less than 30 minutes.

Sea lions are kept on oxygen for 5 to 10 minutes after the isoflurane is discontinued. They are then moved to the recovery area and allowed to breathe ambient air. The anesthetist remains in immediate contact with the animal until it is extubated. After extubation, the anesthetist observes the recovery until the animal is conscious. The animal is allowed to remain in the recovery area as long as it wants and remains under observation by at least one biologist until it departs. The animal must be fully recovered, very alert and ambulate normally before they are allowed to leave the recovery area.

Recovery from isoflurane anesthesia is evident once the animal becomes alert and has regained its locomotory abilities; between 3 and 12 minutes (Heath *et al.* 1997). Consciousness alone is not criteria for release; they must be alert, responsive and maintaining normal postures. The vast majority of sea lions are fully alert and react normally with a flight response and swim/dive within 20 minutes of the cessation of isoflurane.

Sea lions recovering from anesthesia in our study will be monitored for a longer period than would occur after typical branding operation. Additionally, they will have the opportunity to recover in a protected fenced-in area and will be constantly monitored by research staff who will record behavioral observations as a portion of our proposed study.

The APHIS comment does not specify what type of anesthetic was used when they note a recovery time of 24-48 hours, nor do they note what species they observed.

2. We have discussed this suggestion with our veterinary staff and agree that we will not require 1.5 ml/kg. We would therefore like to amend our request to ensure that the total blood volume collected per individual will not exceed 1.0ml per kg body mass. Blood volume of Steller sea lions ranges between 90-120 ml/kg body mass (Richmond *et al.* 2006). Veterinary standards indicate 10% of the total blood volume can be safely drawn in one procedure. This would allow between 9-12ml per kg of body mass. We are requesting a maximum of 1ml per kg body mass, which is an extremely conservative sampling rate.

Finally, our sampling requirements are determined by volumes required for analyses as directed by the research laboratories analyzing the samples. While some analyses may require small amounts of plasma or serum, non-clinical analyses are typically run in duplicate or triplicate. In addition, because pinnipeds have much higher hematocrits than terrestrial mammals, the amount of whole blood that must be collected to result in sufficient plasma or serum is larger than expected by those familiar with routine laboratory animal sampling for other mammals.

The HSUS Comments on File No. 715-1885

In addition to their general comments on all 13 applications (summarized in Section I above; see also Attachment #3), the HSUS submitted the comments and recommendations specific to File No. 715-1885, which are summarized as follows:

1. HSUS requested that the applicant further describe the hypotheses being examined for scat analysis.
2. HSUS stated that it would be helpful for the applicant to specify study locales at the time the permit is issued to avoid duplicative sampling of areas by multiple researchers.

Responses to HSUS Comments on File No. 715-1885

The HSUS' comments were forwarded to the applicant for response. The applicant provided the following responses:

1. Inadequate nutrition is thought to explain the decline of Steller sea lions in western Alaska (Trites and Donnelly 2003). One hypothesis is that sea lions are unable to find enough prey

to eat (due to overfishing). A second hypothesis is that the decline is related to sea lions consuming a high proportion of low energy prey (the junk-food hypothesis).

We will collect scats to test the nutritional stress hypotheses. This requires determining what the sea lions at different rookeries and haulouts have eaten (from identification of bones or DNA in fecal samples) and converting it to energy content and amounts consumed (based on a bioenergetics model and the caloric value of different prey species — see Winship and Trites 2003). We will also measure hormone concentrations in the scats to assess whether the animals are physiologically stressed (from cortisol) and whether the stress can be related to nutrition and hunger (from T3 thyroid hormones that are expected to be lower in nutritionally stressed individuals due to metabolic depression). Hormone concentrations, diet diversity, and average consumption (from bioenergetic models) will be regressed against population size and rates of population change to test the nutritional stress hypothesis and assess the nutritional status of sea lions throughout Alaska.

Collecting scats from rookeries and haulouts is coordinated with other Steller sea lion researchers to minimize disturbance of animals at haulouts and rookeries. Researchers collecting scats will typically accompany researchers collecting other types of data under different permits. The expense and logistical difficulties of accessing sea lion rookeries and haulouts requires researchers to work together to pool their resources to maximize the likelihood of success and minimize disturbance of sea lions. We are not aware of any case to date where duplicate scat samples have been collected and do not foresee such a thing happening in the future.

2. The request for permission to sample all major rookeries and haulouts provides researchers with flexibility to collect at sites that will yield scats that representative of the region, but bypass sites that are too dangerous to land (due to weather) or have insufficient animals to obtain a statistically valid sample size of scats (Trites and Joy 2005). The dynamic nature of haulouts and rookeries (between seasons and across years) makes it difficult to know with certainty which sites will be the most appropriate in any given year or season for sampling, and requires having a certain level of flexibility to ensure that representative samples can be collected safely and with minimum disturbance to the sea lions.
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File No. 881-1890: Alaska SeaLife Center

Abstract – File No. 881-1890

The Alaska SeaLife Center (ASLC), Seward, Alaska, (Principal Investigator: Don Calkins) requests a 5-year permit to conduct population monitoring and studies on health, nutrition, and foraging behavior of free ranging and temporarily captive Steller sea lions. Research would occur in the Gulf of Alaska and the Aleutian Islands and at the ASLC. The purposes of this research are to provide data on pup and juvenile survival, reproductive rates, diet, epidemiology, endocrinology, immunology, virology, physiology, ontogenetic and annual body condition cycles, foraging behavior, and habitat selection. Individuals may be taken by disturbance associated with capture, remote video studies, scat and carcass collection, and mark resighting (14,000 animals annually); capture, restraint and sampling (610 animals annually); and temporary captivity at ASLC with life history transmitter implantation (30 animals annually). Annually, captured sea lions (640 including those in temporary captivity) will undergo morphometrics measurements, blood and tissue collection, digital imaging, hot-branding, scientific instrument attachment, body condition measurement, whisker sampling, metabolic rate measurement, temporary marking, and x-ray exams. The ASLC requests authorization for up to seven research-related mortalities of Steller sea lions per year. The ASLC also requests authorization to collect an unlimited number of carcasses and hard and soft parts of dead Steller sea lions.

Chronology – File No. 881-1890

December 1, 2006	Date of application
January 15, 2007	Application received complete
May 16, 2007	Applicant response to reviewer questions received
May 21, 2007	Clarification on takes received
May 25, 2005	Clarification on takes received
May 31, 2007	Clarification on takes received

Comments – File No. 881-1890

MMC Comments on File No. 881-1890

In addition to their general comments on all 13 applications (summarized in Section I above; see also Attachment #3), the MMC submitted comments and recommendations specific to File No. 881-1890, which are summarized here:

1. The applicant should address the apparent discrepancies in statements related to use of Telazol.
2. Additional justification should be provided for the proposed at-sea foraging study that involves buoyancy/drag experiments on females with dependent pups.
3. The applicant should explain what it considers to be a “significant” adverse effect and explain why it believes that no such effects would occur.
4. Information also should be provided concerning potential effects of buoyancy experiments on juvenile Steller sea lions.

5. In addition, applicant should provide information concerning what would be done to remove the blocks if the remote-release device fails.
6. The Service should clarify with the applicant the statement that “[s]ea lions that are released from the cage without any sampling or other restraint are considered to be incidentally disturbed.” The applicant also should provide information on the maximum duration animals would be maintained in the holding cage before they are sampled or released.
7. A discussion of the potential for adverse impacts on pups or disruption of the mother/pup bond as a result of such frequent activities is not, but should be, provided. The Service should refrain from authorizing this activity until additional information has been provided and the Service has evaluated the potential for adverse impacts to the subject animals and the potential for biasing the research results by subjecting the pups to the repeated stress of capture and handling.
8. As a related matter, whereas the text states that pups would be recaptured up to four times annually, Table 1 accompanying the application indicates that pups would be taken up to five times annually. This apparent discrepancy should be resolved.
9. The Service should require that the applicant provide documentation of Institutional Animal Care and Use Committee approval prior to issuance of a permit.
10. In regard to the Transient Juvenile Steller Sea Lion Project, the Service should consult with the Animal and Plant Health Inspection Service as to the adequacy of the applicant’s South Beach facility for maintaining animals.
11. The applicant should explain and justify under what conditions anesthesia would not be used for the Transient Juvenile Program activities.
12. The applicant should describe (1) what criteria would be used in deciding whether or not to anesthetize animals for labeled water studies, (2) over what time intervals deuterium oxide studies would be conducted, and (3) any potential consequences of repeatedly anesthetizing animals for this purpose.
13. The applicant should describe (1) what criteria would be used in deciding whether or not to anesthetize animals in the Transient Juvenile study for metabolic chamber and associated blood sampling activity, and (2) any potential consequences of repeatedly anesthetizing animals for this purpose.
14. Assuming that a surgeon would be a veterinarian, the applicant should address the discrepancy on page 41 of the application. The applicant also should provide justification of why an experienced marine mammal veterinary surgeon, or a veterinarian with extensive surgical experience working under the supervision of an experienced marine mammal veterinarian, would not carry out this surgical procedure.

Response to MMC Comments on File No. 881-1890: MMC comments specific to File No. 881-1890, were forwarded to applicants for response. The applicant provided responses, which are attached (Attachment #8). Regarding MMC’s comments about Telazol, NMFS is not proposing to permit use of Telazol to capture or restrain adult female Steller sea lions that may be pregnant or lactating. As indicated in the Final Programmatic Environmental Impact Statement for Steller sea lion and northern fur seal research (NMFS 2007), additional studies are needed to demonstrate the safety of Telazol sufficient to allow its use in reproductive age female Steller sea lions. Regarding MMC’s comments about the buoyancy study, NMFS is not proposing to permit attachment of buoyancy and drag devices to Steller sea lions at this time.

NMFS is also not proposing to permit the intentional capture of adult female Steller sea lions at this time, which should minimize the potential for adverse impacts on pups or disruption of the mother/pup bond. With regard to MMC comment #6, NMFS has modified the take table to reflect incidental captures. With regard to MMC comment #10, NMFS has requested and received copies of the IACUC approvals. With regard to MMC comment #11, NMFS has consulted with APHIS on the adequacy of the applicant's South Beach facility for maintaining animals. A final answer from APHIS was pending at the time of this memo.

APHIS Comments on File No. 881-1890:

APHIS submitted comments and recommendations applicable to the 13 applications in general as summarized in Section I above. APHIS did not provide additional comments specific to File No. 881-1890.

Responses to APHIS general comments for File No. 881-1890

APHIS's general comments relevant to activities proposed by ASLC were forwarded to applicants for response. The applicant provided responses, which are attached (Attachment #8).

HSUS comments on File No. 881-1890

In addition to their general comments on all 13 applications (summarized in Section I above), HSUS submitted comments and recommendations specific to File No. 881-1890, which are summarized as follows:

1. This permit involves a number of procedures to be used on free-ranging animals and on temporarily captive individuals that were never mentioned in the DEIS nor was their impact and/or mitigation discussed. These procedures should not be permitted.
2. Although the applicant identifies objectives in the recovery plan, there is no attempt to provide information on hypotheses being tested or the relation of the procedures proposed to hypotheses.
3. Both this applicant and [Marcus] Horning [(File No. 1034-1887)] propose to implant life history (LHX) transmitters. Though Horning states that a portion of his sample size may be met with animals proposed under the ASLC proposal, this permittee does not acknowledge Horning or the relationship of their activities to his proposal. If NMFS grants a permit for this activity (and we do not believe it should) then this applicant's proposal should be subsumed by Horning and not granted separately.
4. In all permit applications involving the transport and captivity of threatened or endangered species, the MMPA's implementing regulations require specific information to be in permit applications that does not appear in this application.
5. Task 1 under this permit is the study of free-ranging Steller sea lions from the Western DPS. No justification was given for the sample size nor do the summary charts appear to substantiate this number.
6. Although the text states that work will focus on maternal behavior and physiology (page 3) the summary charts do not indicate a differential focus on females.
7. As noted above under NMML and ADFG, and in the preamble, darting with Telazol is inappropriate.
8. The studies cited on page 14 for impacts of branding are incomplete and omit mention of studies such as Scordino (2006), who found an increased death rate in branded pups.

9. Task 2 also studies free-ranging animals which will be subjected to attachment of various scientific instruments, though the combination that will be used is not clear either in the text or the summary charts.
10. Anesthesia is only administered to sampled animals “if deemed necessary by the attending veterinarian.” (page 39) This is not appropriate. Analgesic should be provided to any animals subjected to painful or/and stressful procedures. The applicant proposes to withhold food for 12 hours as a safety precaution, but only for captive animals. The rationale should be provided for the differential safety risk to wild and captive animals such that this is necessary for only one of the two groups.
11. Page 22 lists objectives for the program. One of them (#2) is “temporary captivity for up to 30 animals/year.” This is a method, not an objective. Or at least it shouldn’t be an objective.
12. In the discussion of scientific instrumentation the applicants state that they “will determine the exact combination of instruments depending on the age and size of the sea lion, the season, the location, whether simultaneous fish assessments are occurring in the area, and whether the sea lion “will be under simultaneous visual observation.” This latter criterion is not explained (i.e., how visual observation will facilitate the attachment of some instruments but not others).
13. This application does not appear to meet the requirement to describe manner of taking “each” animal, “including the gear to be used.” 50 C.F.R. § 222.308(b)(6)(i).
14. With regard to the buoyancy challenge (which was not assessed in the DEIS) will animals also have camera packages attached in addition to the dive behavior logger and “blocks” that are attached for this experiment?
15. How can the applicant assure that the various combinations of procedures will not have adverse cumulative or synergistic effects on the animals?
16. The sample sizes described in the text on page 33 do not appear to fully comport with the summary charts provided at the end of the application.
17. This proposal would also subject animals to bioelectric impedance analysis (BIA) which other applicants have stated needs to be done in conjunction with administration of deuterium oxide dilution. If this is correct, then the BIA requested in this permit should not be granted since the use of deuterium oxide was not analyzed in the DEIS and thus should not be permitted.
18. We would have appreciated a discussion of the known post-release fate of animals previously subjected to these sorts of experiments by the applicant and what percentage were not re-sighted.
19. We also wish to point out that this application more than doubles the number of animals previously permitted for this type of study but see no evidence that the applicant institution’s facility has been enlarged to accommodate this activity and that of their other permit request to captive-breed Steller sea lions.
20. The NMFS should not permit activities until and unless the applicant has met all regulatory requirements and APHIS has determined that housing and husbandry are sufficient for the number of animals proposed.
21. We do not recommend granting this permit until all procedures have been discussed and their impacts and mitigation assessed as part of the DEIS.
22. The applicant should supply hypotheses being tested as other permit applicants have done and should clearly relate procedures to the hypothesis being investigated.

23. Until and unless there is a clear reason for the specific research protocols being proposed, they should not be permitted.

Responses to HSUS Comments on File No. 881-1890: HSUS comments specific to File No. 881-1890 were forwarded to the applicant for response. The applicant provided responses, which are attached (Attachment #8). Regarding HSUS's comments about Telazol, NMFS is not proposing to permit use of Telazol to capture or restrain adult female Steller sea lions that may be pregnant or lactating. As indicated in the Final Programmatic Environmental Impact Statement for Steller sea lion and northern fur seal research (NMFS 2007), additional studies are needed to demonstrate the safety of Telazol sufficient to allow its use in reproductive age female Steller sea lions. Regarding comment #20, NMFS has consulted with APHIS regarding space requirements for the transient juveniles. A final response from APHIS was pending at the time of this memo. Regarding comment # 21, please refer to "PR Response to HSUS general comments" responses #8 and 9 in Section I above. Regarding comment #21, the applicant provided justification for the specific research protocols being proposed.

File No. 434-1892: Oregon Department of Fish & Wildlife

Abstract – File No. 434-1892

The Oregon Department of Fish and Wildlife (ODFW), Corvallis, Oregon, (Principal Investigator, Robin Brown), requests a 5-year permit to continue to assess status and monitor trend in Steller sea lion abundance, ecology, and vital rates in the southern extent of the Steller sea lion eastern DPS. Research would occur throughout California, Oregon, and Washington and cover a variety of activities. These activities include incidental disturbance to animals during aerial surveys (500 pups and 1,000 older animals per year), ground counts and incidental scat collection (2,000 pups and 4,000 older animals per year), as well as captures, sampling, behavioral observations, and monitoring (up to 10,000 animals per year). ODFW also proposes to capture and sedate (physically or chemically) up to 200 pups and 10 adults annually for measuring, skin biopsying, flipper tagging or other marking, and hot-branding. In addition to the procedures above, 50 pups and 10 adults annually would have fecal loops and culture swabs collected and 80 pups and 10 adults per year would have scientific instruments attached. ODFW requests authorization for up to 10 research-related mortalities of Steller sea lions per year. Up to 1,000 harbor seals and 5,000 California sea lions may be disturbed annually incidental to this research.

Chronology – File No. 434-1892

December 4, 2006	Date of application
December 6, 2006	Application received incomplete
December 22, 2006	Additional information requested from applicant
January 15, 2007	Revised application received
May 14, 2007	Applicant responses to public comments received
May 22, 2007	Applicant provided additional clarifications to application following discussions with NMML regarding take allocations

Comments – File No. 434-1892

Marine Mammal Commission Comments on File No. 434-1892

In addition to their general comments on all 13 applications (summarized in Section I above; see also Attachment #1), the MMC submitted the following comments and recommendations specific to File No. 434-1892:

1. The application does not, but should, indicate the minimum age at which pups would be captured, branded, instrumented with VHF transmitters, etc;
2. The applicant should provide further justification for proposing not to anesthetize adult animals during branding prior to issuing authorization for such activities;
3. The application states that they do not have an IACUC and that “the Animal Welfare Act does not apply in this case.” The Service should defer approval of the application until the applicant provides documentation that the proposed research has been reviewed and approved by an IACUC in accordance with § 2.31 of APHIS’s regulations implementing the AWA.

4. It is unclear whether a veterinarian will be present in the field to oversee branding and other invasive activities.
5. In discussing the floating platform method of capture, the application states that one to ten sea lions may be present when the door is closed. The application also should state the maximum time animals would be maintained in the holding cage before they are sampled or released.
6. Additional information should be provided concerning the proposed short- and long-term monitoring of animals to allow reviewers to evaluate whether monitoring will be sufficient to assess the effects of branding/handling on the subject animals.

Responses to MMC comments on File No. 434-1892

MMC comments specific to File No. 434-1892, were forwarded to applicants for response. The applicant provided responses, which are attached (Attachment #9).

APHIS Comments on File 434-1892

APHIS submitted comments and recommendations applicable to the 13 applications in general as summarized in Section I above (see also Attachment #2). APHIS did not provide additional comments specific to File No. 358-1888.

Responses to APHIS general comments for File 434-1892

APHIS's general comments relevant to activities proposed by ODFW were forwarded to applicants for response. The applicant provided responses, which are attached (Attachment #9).

HSUS comments on File 434-1892

In addition to their general comments on all 13 applications (summarized in Section I above; see also Attachment #3), the HSUS submitted comments and recommendations specific to File No. 434-1892, which are summarized as follows:

1. The NMFS should not permit the use of the most risk-prone techniques where there are clearly more risk-averse methodologies available.
2. This permit [application] is noticeably brief considering the scope of activities proposed.
3. The application does not specify why all adults are subjected to all procedures but not all pups are. Nor does the applicant explain the origin of sample sizes requested other than to state generally that "sample size is sufficient for drawing reasonable inference."
4. Although the applicant states on page 20 that there are no known alternatives to the research proposed, and states that the "tools and methods proposed in this application are state of the art." this is apparently not true and the use of drive counts, arguably the most intrusive manner of counting animals, should not be permitted.
5. There are also some inconsistencies in statements.
6. The rationale for denying anesthesia to adults under this permit is not made clear.
7. Of the total of 240 animals to be captured, branded and sampled each year under this proposed permit, permission is requested for 10 incidental mortalities. This equates to a mortality rate of approximately 4%. This rate is substantially higher than that projected in the DEIS for these types of activities (see tables in DEIS at 4-53 and 4-54). If the applicant believes that there are likely to be fewer deaths, fewer should be requested.
8. Although the applicant attempts to quantify the mortality risk from branding on pages 16-18

of the application, the estimates not only do not comport with rates of risk in the DEIS, they do not even reflect deaths that have occurred in Oregon.

9. This application does not provide sufficient and consistent information regarding likely impacts. It is not clear that the applicant can meet the test required by the MMPA that the methods used are those less likely to cause pain and suffering and are the most risk averse of available technologies.

Responses to HSUS comments on File No. 434-1892

HSUS comments specific to File No. 434-1892, were forwarded to applicants for response. The applicant provided responses, which are attached (Attachment #9).

File No. 1049-1886: Kate Wynne (University of Alaska)

Abstract – File No. 1049-1886

Kate Wynne, University of Alaska Fairbanks, Kodiak, AK requests a 5-year permit to continue studies on the abundance, distribution, and diet of the western DPS of Steller sea lions. Authority is requested to harass animals for aerial surveys (13,000 individuals per year), scat collection (2,000 individuals per year), and land-based (500 individuals per year) and vessel-based (1,000 individuals per year) brand re-sighting activities. Activities would take place throughout the year; however, rookeries would not be approached in June to minimize disturbance during breeding and pupping season. Research would occur in the western and central Gulf of Alaska.

Chronology – File No. 1049-1886

December 1, 2006	Date of application
December 12, 2006	Application received incomplete
December 22, 2006	Additional information requested from applicant
January 22, 2007	Revised application received
May 14, 2007	Applicant responses to public comments received

Comments – File No. 1049-1886

MMC Comments on File No. 1049-1886

In addition to their general comments on all 13 applications (summarized in Section I above; see also Attachment #1), the MMC submitted the following comments and recommendations specific to File No. 1049-1886:

1. This application appears complete and they have no specific comments. The MMC recommends this permit be issued.

APHIS Comments on File No. 1049-1886

APHIS had no comments relevant to this application.

HSUS Comments on File No. 1049-1886

HSUS recommends issuing this permit and notes that the application provides clear hypotheses that are being tested, their relation to the recovery plan, and methodology that will address key issues being investigated.

File No. 1034-1887: Markus Horning (Oregon State University)

Abstract – File No. 1034-1887

Dr. Markus Horning, Oregon State University, Hatfield Marine Science Center, Newport, Oregon, requests a 5-year permit to study condition and health status of juvenile Steller sea lions in the western DPS; and, using satellite-linked Life History Transmitters (LHX), will estimate survival rates, and obtain long-term data on foraging effort and causes of mortality. Over five years, up to 140 juvenile Steller sea lions will be captured, anesthetized, handled and sampled (morphometrics; 3-D photographic imaging; X-ray imaging; ultrasound; deuterium oxide administration; blood, whisker, hair, claw, blubber, and skin sample collections; mucosal swabs; naturally excreted feces), flipper tagged or hot-branded, and external instruments applied. Of those animals, 100 will additionally have internal LHX transmitters surgically implanted. Researchers would implant up to 50 carcasses with the LHX transmitters to assess the effect of the non-independence of two paired tags on the calculation of correction factors. Dr. Horning requests authorization for up to 15 research-related mortalities over five years, not to exceed five in any one year. Dr. Horning also proposes to install remote imaging systems for 3-D photogrammetry at locations in Alaska and Oregon to census animals and monitor body mass, condition, and health trends. Up to 10,500 Steller sea lions may be harassed annually during capture and other activities. California sea lions, harbor seals, and northern elephant seals may also be harassed incidental to activities with Steller sea lions.

Chronology – File No. 1034-1887

December 1, 2006	Date of application
January 15, 2007	Application received complete
May 16, 2007	Response to comments received
May 31, 2007	Clarification on takes received

Comments – File No. 1034-1887

MMC Comments on File No. 1034-1887

In addition to their general comments on all 13 applications (summarized in Section I above; see also Attachment #1), the MMC submitted the following comments and recommendations specific to File No. 1034-1887:

1. Additional information is needed about how and how long animals implanted with Life History Transmitters will be monitored for injuries or death related to implantation procedures.
2. In describing the platform method of capture, the application does not, but should, state the maximum time that animals would be held in the holding cage until they are sampled, released, etc.

Applicant response to MMC comments on File No. 1034-1887

The MMC's comments were forwarded to the applicant for response. The applicant provided responses, which are attached (Attachment #10). NMFS is not proposing to permit the capture, sampling, or surgical tag implantation as proposed by this applicant.

APHIS Comments on File No. 1034-1887

APHIS submitted comments and recommendations applicable to the 13 applications in general as summarized in Section I above (see also Attachment #2). APHIS did not provide additional comments specific to File No. 1034-1887.

Responses to APHIS general comments for File No. 1034-1887

APHIS's general comments relevant to activities proposed by Dr. Horning were forwarded to the applicant for response. The applicant provided responses, which are attached (Attachment #10). The applicant has also provided copies of IACUC approvals.

HSUS comments on File No. 1034-1887

In addition to their general comments on all 13 applications (summarized in Section I above; see also Attachment #3), the HSUS submitted comments and recommendations specific to File No. 1034-1887, which are summarized as follows:

1. This permit is undeniably well written but on a minor note, some of the citations in the text appear to be missing from the bibliography.
2. We have no particular concerns with Task 2 of the application (installation of three dimensional photogrammetry called SLiDAP) and are intrigued by this new non-invasive approach to assessing body condition.
3. The applicant has requested the use of some procedures that were not discussed and whose effects and mitigation were not mentioned in the DEIS and thus these procedures should not be used.
4. There is some confusion about sample size for the proposed surgically implanted tags that requires urgent attention.
5. We believe that the physiological stress of surgical procedures required for the LHX, and its attendant risk should preclude the attachment of other devices at the ASLC, which may themselves add to the animal's burden and compromise reliability of data gained from the LHX. To adequately control sampling, standardize protocol, and minimize risk to animals, we would prefer to see that only one permit be granted to explore this technology, if NMFS grants a permit for its use.
6. This risk-prone surgical procedure which the applicant proposes to utilize in remote areas of Alaska was prohibited by NMFS in 2005 outside of the ASLC facility because NMFS wished to assure that "animals could be monitored by veterinary and husbandry staff for several days post-operatively and treated should there be any complications from the surgery." This procedure remains risky and we do not feel that it should be used in the field where animals cannot be monitored postsurgery.
7. We are concerned that this technology [implantable tags] may not yet be appropriate for use with this species.
8. Further, there is uncertainty regarding sampling and use of various protocols.

9. The applicant seeks incidental mortality of up to 5 animals per year, for a mortality rate as high as 20% per year, which is unacceptable. We would prefer to see this methodology tried and shown to be risk averse in additional surrogate species before it is permitted for use with animals from the endangered Western stock.
10. While we do not oppose granting of the portion of this permit dealing with the SLiDAP, we believe that the LHX portion of the permit should be denied.

Response to HSUS Comments on File No. 1034-1887

HSUS comments specific to File No. 1034-1887 were forwarded to the applicant for response. The applicant provided responses, which are attached (Attachment #10). NMFS does not propose granting the LHX portion of the permit at this time. Rather, NMFS will permit up to 30 LHX tag implants per year in transient juvenile animals held in temporary captivity at the ASLC under Permit No. 881-1890) to assure that animals will be “monitored by veterinary and husbandry staff for several days post-operatively and treated should there be any complications from the surgery.”

File No. 881-1745: Alaska SeaLife Center

Abstract – File No. 881-1745

The ASLC (Principal Investigator: Dr. Shannon Atkinson) requests a 5-year amendment to Permit No. 881-1745 to breed captive Steller sea lions at the ASLC, to produce up to four pups, and conduct studies related to gestation, lactation, and pup growth and development. Permit No. 881-1745, issued March 16, 2006 (59 FR 15387), currently allows studies on three adult (one male, two female) captive Steller sea lions held by the ASLC to investigate stress responses, endocrine and immune system function, and seasonal variations in normal biological parameters such as mass and body composition, and conduct of ‘research and development’ of external tags and attachments for future deployment on free-ranging animals. The purpose of the proposed amendment is to assess physical, metabolic, hormonal, and immunological changes related to gestation, lactation, and pup growth and development. The breeding part of this study may require the transfer of additional captive adult Steller sea lions from facilities in the U.S., or import from facilities in Canada. Offspring produced would be held at the ASLC for long-term physiological studies, or be transferred or exported to other facilities for permanent holding. During gestation the adult animals would be subject to currently permitted sampling procedures, with additional study-specific testing on the samples themselves. Milk samples would be collected from adult females. Offspring produced would be subject to sedation, anesthesia, physical restraint, morphometric measurements, metabolic measurements, collection of urine and feces, blood sampling, and audio and visual recordings (e.g., audio, photographic, video, digital, thermal, radiographic). Offspring would be trained to encourage voluntarily participation in research activities to minimize the use of physical restraint, sedatives, or anesthetics during sampling. The ASLC requests one research-related mortality of any live-born Steller sea lion during the proposed study. The ASLC proposes that stillborn or spontaneously aborted pups not be considered related to the study or counted against any mortality allowance in their permit.

Chronology – File No. 881-1745

December 4, 2006	Date of application
May 21, 2007	Applicant response to reviewer comments received
May 31, 2007	Additional information requested
June 8, 2007	Applicant response received

Comments – File No. 881-1745

MMC comments on File No. 881-1745

In addition to their general comments on the 13 applications (summarized in Section I above; see also Attachment #1), the MMC submitted comments specific to File No. 881-1745, which are summarized here:

1. Based upon the MCC’s understanding from APHIS, the permit holder does not currently have sufficient space to conduct a Steller sea lion breeding program. The Marine Mammal Commission recommends that the Service defer approval of the amendment request until the issue of space at the facility is resolved to the Animal and Plant Health Inspection Service’s satisfaction.

2. We note that, in addition to studying the physical, metabolic, hormonal, and immunological changes during gestation and lactation, the applicant will continue to conduct currently authorized research “deemed harmless to mother, fetus, and pup” on the subject females. It is unclear whether and, if so, the extent to which these multiple studies might bias the results of the proposed breeding study. The Marine Mammal Commission recommends that the Service require the applicant to address this issue.
3. Finally, the applicant should be required to explain more fully the relevance of the proposed breeding study to the recovery of the wild population of Steller sea lions.

Response to MMC comments on File No. 881-1745

The MMC’s comments were forwarded to the applicant for responses. The applicant’s responses are attached (Attachment #11). NMFS has provided APHIS with additional information from ASLC about its facilities and consulted with APHIS regarding whether there is space sufficient to conduct the proposed breeding activities. A final response from APHIS was pending at the time of this memo.

APHIS comments on File No. 881-1745

In addition to their general comments on the 13 applications, APHIS provided comments specific to File No. 881-1745, which are summarized as follows:

1. The facility does not have room for additional Stellar [sic] sea lions, as at least one of the “outdoor lab” pools identified is not large enough. There does not appear to be a valid reason to breed this endangered species in captivity, unless they are being bred for future release.
PR1 added the following clarification before forwarding to the applicant: Please explain how your facility would meet APHIS space requirements for the additional animals associated with the proposed captive breeding. Please explain how the captive breeding would benefit Steller sea lion conservation.
2. In addition, issue of export and import of animals was not addressed. Any approval of this protocol is not permission for such movements. Those movements require other permits or approval.
PR1 added the following clarification before forwarding to the applicant: Please explain what other permits or approvals have been obtained or sought in relation to this proposed activity.
3. If the animals were impregnated, all other experimentation and sampling should be discontinued, as pregnancy will interfere (potentially) with other studies, and other manipulations would endanger the pregnancy. With such a small sample size, it is [sic] very doubtful that any significant studies could be performed/data analyzed.
PR1 added the following clarification before forwarding to the applicant: Please discuss issues related to effects of pregnancy on specific studies and vice versa. Please explain how the sample size would provide statistically robust data or otherwise be applicable to the population at large.
4. This project should not be approved. It appears to violate the ESA and does not benefit the animals.

5. The captive breeding permit is recommended to be denied. Any breeding of Stellar [sic] sea lions should be done only at facilities that have room and can maintain a breeding colony, without exposing the animals to research protocols.

Applicant response to APHIS comments on File No. 881-1745

The APHIS comments were forwarded to the applicant for responses. The applicant's responses are attached (Attachment #11). NMFS has provided APHIS with additional information from ASLC about its facilities and consulted with APHIS regarding whether there is space sufficient to conduct the proposed breeding activities. A final response from APHIS was pending at the time of this memo. As noted in Section III below, PR1 is not recommending issuance of this permit until APHIS verification is received.

HSUS comments on File No. 881-1745

In addition to their general comments on all 13 applications (summarized in Section I above; see also Attachment #3), the HSUS submitted comments and recommendations specific to File No. 881-1745, which are summarized as follows:

1. It is not clear that this applicant has sufficient space at their facility to properly house animals under APHIS guidelines.
2. There are no specific hypotheses being tested, making it difficult for NMFS or the public to determine how this proposal will contribute to a research need identified in a recovery plan, contribute "significantly" to understanding of the species' biology or conservation issues, or fulfill a "critically important research need."
3. Justification for various procedures and clear discussion of the potential consequences of its activities are lacking.
4. This application casts doubt on the applicant institution's proposal to study maternal condition, lactation and reproduction in wild animals. (see above File #881-1890) This application states that studies of captive animals are better in many respects because "associated handling stress [with free-ranging animals] could perhaps disrupt the reproductive events being studied." (page 4)
5. The justification for the numbers is not provided in the application and there is certainly no justification provided for changing the original verbiage (e.g. the strike-outs indicate a change of thrice weekly swabs to daily swabs, drawing blood changed to four times a year instead of two).
6. There is insufficient justification provided for breeding additional long-term captives as a means of providing insight into free ranging animals.
 7. This application provides insufficient justification of the need for captive breeding of this species, particularly if animals cannot be properly maintained in the facility that has continued to justify their captivity.
8. The applicants state that, if permitted, this activity "may require" (page 3) the transfer of up to 4 adult animals "i.e. 1 male and 3 females" (page 7 and 17) to other captive display facilities. The reason is not explained.
9. There should be a clear and pressing need for a specific sort of research to justify producing more captive animals that will require their transfer or the transfer of other animals to outside facilities in the process. Again, no specific hypotheses are provided for testing.
10. The number and purpose of animals involved in inter-institutional transfers is confusing.

11. What is the reason for the transfer of additional animals from other institutions and how does this relate to the studies proposed in the permit?
12. Are pups involved in the transfers and, if so, how does this affect the “studies” in which the ASLC proposes they will participate to further the mission of the organization? Are pups being bred to increase the number of Steller sea lions in captive display facilities, with the research being somewhat secondary in nature?
13. We believe that there is no bona fide reason for this permit’s proposed “research,” that will result in the birth of four pups destined to become permanent captives, thus necessitating the transfer of a number of animals in and between facilities for reasons that appear to have nothing to do with elucidating the causes or mitigation of the decline of Steller sea lions. See 16 U.S.C. § 1374(c)(3)(A). This permit should be denied.

Applicant response to HSUS comments on File No. 881-1745

The HSUS comments were forwarded to the applicant for responses. The applicant’s responses are attached (Attachment #11). NMFS has provided APHIS with additional information from ASLC about its facilities and consulted with APHIS regarding whether there is space sufficient to conduct the proposed breeding activities. A final response from APHIS was pending at the time of this memo.

Dan Sarpola, member of the public, comments on File No. 881-1745

Mr. Sarpola provided comments on the proposed captive breeding and associated studies. The full text of his comments are attached. His comments are summarized as follows:

1. As stated in the application, the pregnant female Steller sea lions will undergo procedures that could cause the female to spontaneously abort a pup or have a stillborn pup. Should such a situation be counted against mortality listed for the permit? Will allowances be made to reduce research induced stress on the animals once they are determined to be pregnant?
2. How will the data gained from the potential pups be significantly different from data already gained?
3. How will data from pups born to animals from the southern stock assist in determining the reason for the northern Steller sea lion stock decline?
4. How will physiological data from pregnancies of 14 year old females be applied to wild animals that usually have pups much earlier in life?
5. What measures are in place to adequately protect the female Steller sea lions from a potentially violent and/or deadly breeding interaction? Does the potential data gained from breeding outweigh the risk of breeding the animals in a captive setting?
6. This project could potentially result in four new animals living in captivity. Are there animals already in captivity at other facilities that could be used for this research? What about the potential use of Steller sea lions that are brought into rehabilitation centers throughout the Pacific northwest and deemed inappropriate for release?

Applicant response Mr. Sarpola, on File No. 881-1745: Mr. Sarpola’s comments were forwarded to the applicant for response. The applicant’s responses are attached (Attachment #11).

File No. 881-1893: Alaska SeaLife Center

Abstract – File No. 881-1893

The Alaska SeaLife Center (ASLC), Seward, Alaska, (Principal Investigator: Russel Andrews), requests a 5-year permit to characterize the movements, foraging behavior and habitat-associations of northern fur seal pups during their first winter at sea. ASLC proposes to capture and instrument up to 50 northern fur seal pups annually on the Pribilof Islands and Bogoslof Island. Once captured, pups would be physically restrained and sedated for: blood sampling; measurements of body composition (isotope dilution, bioelectric impedance analysis, and ultrasonic imaging of blubber); taking skin, blubber, and muscle biopsies; collecting fecal loops and culture swabs; collecting vibrissae, hair and nails; attachment of flipper tags and marking fur temporarily; and attachment of scientific instruments and placement of internal stomach temperature transmitters. Up to 200 northern fur seals may be captured at sea in the North Pacific and subject to the same list of procedures as above, with the addition that adult females would undergo ultrasonography of the reproductive tract to determine pregnancy. Up to 5,000 fur seals of either sex and any age may be disturbed annually during approaches to the rookery to capture pups, to read flipper tags, and to check previously attached equipment for damage. When possible, fur seals returning to their natal island would be recaptured in subsequent years to remove instruments and to repeat blood collection and measurements of body composition. The ASLC requests authorization for up to four research-related mortalities of fur seals per year.

Chronology – File No. 881-1893

December 4, 2006	Date of application
December 10, 2006	Application received incomplete
December 22, 2006	Additional information requested from applicant
January 19, 2007	Revised application received
May 17, 2007	Applicant responses to public comments received
May 25, 2007	Applicant provided additional clarifications to application following discussions with NMML and PR1 regarding take allocations

Comments – File No. 881-1893

Marine Mammal Commission Comments on File No. 881-1893

In addition to their general comments on all 13 applications (summarized in Section I above; see also Attachment #1), the MMC submitted the following comments and recommendations specific to File No. 88101893:

1. The application states that the “use of sedatives and anesthetics will only be conducted under the supervision of a veterinarian or an individual that has received training from a veterinary anesthetist and that has significant experience in anesthetizing fur seals.” If a veterinarian will not be present in the field, an explanation should be provided. If a veterinarian will be present, his or her curriculum vitae should be submitted if it is not already on file.

Responses to MMC comments on File No. 881-1893

The MMC's comments were forwarded to the applicant for response. The applicant provided responses, which are attached (Attachment #12).

APHIS comments on File No. 881-1893

APHIS submitted comments and recommendations applicable to the 13 applications in general as summarized in Section I above (see also Attachment #2). APHIS provided the following comments specific to File No. 881-1893:

1. Discussion of threshold levels for mortality and stopping need to be addressed. It is unclear what that level is. Level may be same or different for level A and level B harassment activities. Express the results as real numbers.
2. The institution needs to address alternatives to biopsy techniques proposed, and if muscle biopsies are needed. There is no justification presented for this sample. All prior comments apply to this application as well.
3. Use of sedation and anesthesia must be under the direct supervision of a qualified veterinarian. Valium is a controlled substance and can only be prescribed and dispensed for a specific patient by a veterinarian.

PR1 added the following clarification before forwarding to the applicant: Please clarify whether or how a qualified veterinarian is involved in the proposed activities.

Responses to APHIS comments on File No. 881-1893

APHIS's general comments relevant to activities proposed by ASLC, and any comments specific to File No. 881-1893, were forwarded to the applicant for response. The applicant provided responses, which are attached (Attachment #12).

HSUS comments on File No. 881-1893

In addition to their general comments on all 13 applications (summarized in Section I above; see also Attachment #3), the HSUS submitted the comments and recommendations specific to File No. 881-1893, which are summarized as follows:

1. It would be helpful to explain how some of the procedures proposed for captured animals relate to the hypotheses being tested.
2. The applicant states that this (0.08 mortality rate) "seems a reasonable threshold above which research activities would halt until a review can be conducted." It is not clear what is meant by this statement, but an 8 percent mortality rate is quite high in comparison to that projected in the DEIS (see 4-52, 4-53).
3. The sample size was determined by what the applicant felt could be logistically handled. One hopes that this sample size is sufficient to collect data sufficiently robust to address the questions being asked.
4. The various intrusive procedures being used on animals of mixed aged animals being captured at sea do not appear clearly related to the hypotheses outlined on page 6-7.
5. The applicant's response to the form's NEPA considerations requires expansion.
6. The application indicates that some animals will receive sedation or anti-anxiety drugs and some will not. We believe that this should be consistent. We are also concerned that anesthesia may be administered by personnel without significant qualifications.
7. We are not clear as to the relation of some of the various procedures described on pages 13-18 to the hypotheses outlined in the permit.

8. This permit proposes important questions to be investigated. The applicant should clearly relate all procedures being proposed to the hypotheses being investigated and address some of the uncertainties identified above.

Responses to HSUS comments on File No. 881-1893

HSUS comments specific to File No. 881-1893, were forwarded to applicants for response. The applicant provided responses, which are attached (Attachment #12).

File No. 1119-1882: Aleut Community of St. George Island

Abstract -File No. 1119-1882

The Aleut Community of St. George Island, St. George Traditional Council, Ecosystem Conservation Office (Principal Investigator, Andrew Malavansky), St. George Island, AK, 99591 requests a 5-year scientific research permit to fulfill their Biosampling, Disentanglement, and Island Sentinel program responsibilities as established under the co-management agreement between NMFS and the Aleut Community. The applicant requests authorization for incidental disturbance of up to 450 northern fur seals per year during the collection of biological samples from dead stranded and subsistence hunted marine mammals. Up to 5,250 northern fur seals may be disturbed during disentanglement events. The Island Sentinel Program may result in the disturbance of up to 3,400 northern fur seals per year during haulout and rookery observations, monitoring, and remote camera maintenance. Steller sea lions and harbor seals (*Phoca vitulina*) may be disturbed during the course of any of these activities.

Chronology-File No. 1119-1882

December 1, 2006	Date of application
January 17, 2007	Application received complete
May 14, 2007	Responses to public comments received
May 23, 2007	Applicant provided additional clarifications to application following discussions with NMML regarding take allocations

Comments- File No. 1119-1882

MMC comments on File No. 1119-1882

In addition to their general comments on the 13 applications (see Section I above), the MMC had the following comment specific to File No. 1119-1882:

1. The Service's FR notice states that samples from dead stranded and subsistence hunted marine mammals would be exported to researchers. However, the application does not appear to request authorization to export samples.

Applicant Response to MMC comments on File No. 1119-1882

Although we do not have plans to export samples outside the United States. There is the possibility of future international collaboration.

PR1 Response to MMC comments on File No. 1119-1882

The application included a take table that requested the export of samples.

HSUS comments on File No. 1119-1882

In addition to their general comments on the 13 applications (see Section I above), The HSUS had the following comment on File No. 1119-1882:

1. The HSUS encouraged the applicants to obtain a letter of agreement (LOA) with NMFS for disentanglement.

Applicant Response to HSUS comments on File No. 1119-1882

Captures of fur seals for the purpose of disentangling will be covered under our Stranding Agreement with the NMFS, currently being written.

PR1 Response to HSUS comment on File No. 1119-1882

The applicant is working with the NMFS Alaska Regional Office to become part of the stranding network.

File No. 1118-1881: Aleut Community of St. Paul Island

Abstract – File No. 1118-1881

The Aleut Community of St. Paul Island, Tribal Government, Ecosystem Conservation Office (Principal Investigator, Phillip Zavadil) PO Box 86, St. Paul Island, AK, 99660 requests a 5-year scientific research permit to fulfill their Biosampling, Disentanglement, and Island Sentinel program responsibilities as established under the co-management agreement between the NMFS and the Aleut community. The applicant requests authorization for incidental disturbance of up to 550 northern fur seals per year during the collection of biological samples from dead stranded and subsistence hunted marine mammals. Up to 6,500 northern fur seals may be disturbed during disentanglement events. The Island Sentinel program may result in the disturbance of up to 3,400 northern fur seals per year during haulout and rookery observations, monitoring, and remote camera maintenance. Steller sea lions and harbor seals may be disturbed due to these activities.

Chronology – File No. 1118-1881

December 1, 2006	Date of application
January 15, 2007	Application received complete
May 17, 2007	Responses to public comments received
May 23, 2007	Applicant provided additional clarifications to application following discussions with NMML regarding take allocations

Comments – File No. 1118-1881

MMC comments on File No. 1118-1881

In addition to their general comments on the 13 applications (see Section I above), the MMC had the following comment specific to File No. 1118-1881:

1. The Service's FR notice states that samples from dead stranded and subsistence hunted marine mammals would be exported to researchers. However, the application does not appear to request authorization to export samples.

Applicant Response to MMC comments on File No. 1118-1881

Although we do not have plans to export samples outside the United States, there is the possibility for future international collaborations.

PR1 Response to MMC comments on File No. 1118-1881

The application included a take table that requested the export of samples.

HSUS comments on File No. 1118-1881

In addition to their general comments on the 13 applications (see Section I above), The HSUS had the following comments on File No. 1118-1881:

1. HSUS did not oppose granting of this permit. HSUS noted that the numbers of animals subject to incidental harassment in the text do not appear to match the number in the take table.

PR1 Response HSUS comments on File No. 1118-1881

The applicant has clarified the incidental harassment numbers after conversations with Rolf Ream of NMML.

File No. 715-1884: North Pacific Universities Marine Mammal Research Consortium

Abstract – File No. 715-1884

The North Pacific Universities Marine Mammal Research Consortium (Principal Investigator, Andrew Trites), University of British Columbia (UBC), Vancouver, B.C., Canada, requests a scientific research permit to continue to study the distribution, life history, physiology, and foraging and behavioral ecology of northern fur seals on the Pribilof Islands and Bogoslof Island. Research activities would involve harassment of animals for capture, measuring, flipper tagging, coded wire tagging, and blood, skin, blubber, tooth and vibrissae sampling (200 pups and 200 non-pups per year). Pups would also be injected with tetracycline and recaptured for age determination. NPUMMRC also requests capture, measure, and attach scientific instruments to no more than 30 lactating females annually. Incidental disturbance of Steller sea lions could occur as a result of the research activities.

Chronology – File No. 715-1884

November 30, 2006	Date of application
December 7, 2006	Application received incomplete
December 22, 2006	Additional information requested from applicant
January 15, 2007	Revised application received
May 17, 2007	Applicant responses to public comments received
May 24, 2007	Applicant provided additional clarifications to application following discussions with NMML regarding take allocations

Comments – File No. 715-1884

MMC Comments on File No. 715-1884

In addition to their general comments on all 13 applications (summarized in Section I above), the MMC submitted comments and recommendations specific to File No. 715-1884, which are summarized as follows:

1. It is unclear whether a veterinarian will be present in the field to oversee administration of anesthesia and invasive procedures.
2. The applicant should clarify whether a local anesthetic would be used for obtaining blubber biopsy samples, and if not, why not.
3. The application states that all proposed research also must be covered by permits issued by the UBC animal care committee; however, no documentation from that committee has been provided. The Service should require that the applicant provide such documentation. Although we assume that the documentation will satisfy the applicable requirements in Canada, the Service should ensure that it meets the requirements of the regulations implementing the Animal Welfare Act.

Responses to MMC comments on File No. 715-1884

The MMC's comments were forwarded to the applicant for response. The applicant provided the following responses:

1. A veterinarian will be present in the field to oversee anesthesia and invasive procedures.

Our veterinarian (Dr. Martin Haulena) is listed on our permit application and his CV is on file with the Permit Office;

2. Pg 18 of our application notes that “*a blubber sample may be taken for fatty acid or toxicology analysis from anesthetized individuals (while under isoflurane gas).*” A local anesthetic (~1 mL 2% xylocaine [lidocaine] injected at site) will also be administered for long-term analgesic effect; and
3. Copies of permits issued by the UBC Animal Care Committee can be provided as they are issued. A university based researcher could not undertake research permitted by NMFS without also receiving the approval of their Animal Care Committee.

APHIS Comments on File No. 715-1884

APHIS submitted comments and recommendations applicable to all 13 applications in general, as summarized in Section I above, which were forwarded to the applicant for response. APHIS did not provide additional comments specific to File No. 715-1884.

Responses to APHIS general comments for File No. 715-1884

APHIS’ comments were forwarded to the applicant. The applicant provided the following responses:

1. We anticipate from experience that the procedures will take less than 20 minutes to perform, and therefore the fur seals will not experience an extended recovery period. Nonetheless, animals will still be monitored for a minimum of 20 minutes post-anesthesia for critical behaviors (ataxia, disorientation, lethargy, weakness), and monitoring will be extended until these symptoms cease.
2. Pg 18 of our application notes that “*a blubber sample may be taken for fatty acid or toxicology analysis from anesthetized individuals (while under isoflurane gas).*” A local anesthetic (~1 mL 2% xylocaine [lidocaine] injected at site) will also be administered for long-term analgesic effect.
3. The minimum requirements for a full panel of standard hematology and blood biochemistry is 1 mL whole blood and 1 mL serum, which translates into a minimum 3 mL total blood sample. We feel that 5 mL total is a realistic and physiologically safe value to ensure the tests can be adequately performed and take into account pragmatic collection limits.
4. All painful procedures will be completed under isoflourane anesthesia. Biopsy procedures will also include an additional local anesthetic injection for long-term analgesic relief. Typically, flipper tagging of pups does not entail anesthesia (but does include cleaning to minimize infection) as innervation is minimal in the inter-digit webbing.

HSUS Comments on File No. 715-1884

In addition to their general comments on all 13 applications (summarized in Section I above), The HSUS submitted comments specific to File No. 715-1884, which are summarized as follows:

1. This permit application has clear objectives, though it does not specify hypotheses being tested. NMFS should consider issuing a single permit for the activity described in activity 1 under this permit to avoid duplication of effort with the permit proposed by ASLC (File No. 881-1893) and assure that all data being collected are done systematically and compatibly for maximum utility and minimal impact.

2. Activity 1 of this application involves the capture of 35 lactating females from St. Paul Island, who will be recaptured each year to download archived data. There should be additional discussion of the risk and benefit of multiple captures/stresses vis a vis the possibility of using satellite linked tags that do not require recapture. Further there is no discussion of how the applicants would respond if mothers and pups fail to reunite.
3. Sampling protocol should be specified in advance and clearly related to the hypotheses being investigated to assure appropriate methodology and robust sampling design.
4. The summary charts indicate on page 14 that there are 4 different categories of animals in which mortality may occur (i.e., 2 deaths per category each for subadult males, pups, mature females and mature males) but only 3 categories of sampling appear to be delineated (i.e., pups, mature females and subadult males). This should be reconciled to properly account for dead adult males who do not appear to be mentioned in the capture numbers.
5. The applicant also proposes to inject tetracycline to mark teeth and bones. This procedure was not analyzed for impact in the DEIS (see Appendix B) and should not be permitted.
6. As noted above, we believe that Activity 1 should be integrated as part of a single tagging and monitoring permit rather than granting permits to both this applicant and the ASLC for what appears to be work addressing the same sorts of questions with different tag and capture designs.

Responses to HSUS comments on File No. 715-1884

The HSUS comments were forwarded to the applicant for response. The applicant provided the following responses:

1. The ASLC application proposes to attach satellite tracking tags to northern fur seal pups. This appears to be the same activity that NMFS researchers have been undertaking for the past two years. It is very different however from our study of lactating northern fur seals, which is designed to determine where they are feeding relative to where commercial fisheries are occurring. The types of tags being applied are very different technologies and are being used to answer different questions for different age classes.
2. The type of detailed data we are collecting on foraging behavior cannot be transmitted to satellites. Data are being recorded every 2 to 5 seconds for 10 different parameters. The millions of data points being generated cannot be sent by satellites. In addition, we feel that electronic devices that are no longer being used to collect data should be removed from the animals rather than wait for them to fall off when the animal molts. It also allows us to recycle and reuse the electronic devices. We believe the likelihood of a female dying during capture is extremely low. None of the females we handled in past years died, nor did we have any concerns that we were risking the life of any of the individuals we handled. Our estimates of mortality are precautionary and were set in anticipation of the unexpected. Should a female die, it is very unlikely that her pup could be identified.
3. We are seeking permission to try all three approaches to capture adult females, with the provision that we may not use all three. Our goal is to minimize disturbance and stress to the animals we capture, but no one has yet attempted this particular study. As such, we are developing new protocols and have identified three promising techniques to capture adult females. All techniques that are used in the field to capture and handle pinnipeds have been developed through an iterative approach of trial and error that is refined to improve efficiency and minimize stress to wild populations. We propose to develop this new capture

procedure in consultation with NMFS and the Tribal Government. Requesting permission to take skin samples and swab lesions and orifices was made in anticipation that other researchers with specific interests in disease, reproductive biology and genetic research could contribute to understanding the population of marked fur seals. Obtaining and archiving these samples is a simple procedure and one we feel is responsible and prudent.

4. A similar comment was made above (#25) where we outlined our rationale for including an adult male mortality.
5. We are proposing to age fur seals from the growth rings in their teeth. However, aging fur seals by counting the number of growth rings on their teeth while commonly accepted has not been validated. Tetracycline has been routinely used with mammals and can be given to a sample of fur seal pups to ensure that fur seals are correctly aged from teeth. It is an important and necessary study. Tetracycline will not have any adverse effect on the animals; and
6. As noted in Comment #29, the types of electronic devices being deployed represent very different technologies and are being used to answer different questions for different age classes of fur seals.

PR Response to HSUS comments on File No. 715-1884

Regarding comment #5, please refer to “PR Response to HSUS general comments” responses #8 and 9 in Section I above.

File No. 715-1883: North Pacific Universities Marine Mammal Research Consortium

Abstract – File No. 715-1883

The NPUMMRC (Principal Investigator: Dr. Andrew Trites) requests a 5-year permit to conduct physiological studies on captive northern fur seals to test the hypothesis that changes in food supply or environmental conditions are inducing a state of nutritional stress that is causing changes in survival or reproductive success. Up to 32 fur seal pups from St. Paul Island, AK, would be captured, restrained, and gender determined. Of those 32, up to 16 female pups would have blood samples taken and a veterinary health exam performed. Of those 16, up to eight pups would be held in temporary enclosures for up to seven days for further health testing (blood sampling, physical exams). Of those eight, six female pups would be transported to the Vancouver Aquarium, Canada, for long-term physiological and nutritional research. During capture operations, up to 185 fur seals may be incidentally disturbed. The NPUMMRC requests up to one research-related mortality over the duration of the permit. While the actual captures will occur in a single year, the NPUMMRC has requested a 5-year permit to allow for flexibility in logistical coordination of the captures.

Chronology – File No. 715-1883

December 1, 2006	Date of application
January 15, 2007	Application received complete
May 17, 2007	Response to reviewer comments received
May 30, 2007	Additional information requested

Comments – File No. 715-1883

MMC comments on File No. 715-1883

In addition to their general comments on the 13 applications (summarized in Section I above; see also Attachment #1), the MMC submitted the following comment specific to File No. 715-1883:

1. The application states that all proposed research must also be covered by permits issued by the UBC animal care committee; however, no documentation from the committee has been provided. The Service should require that the applicant provide such documentation. Although we assume that the documentation will satisfy the applicable requirements in Canada, the Service should ensure that it meets the requirements of the regulations implementing the Animal Welfare Act.

Applicant Response to MMC comments on File No. 715-1883

The applicant provided a copy of the UBC Animal Care Permit, which is on file with the application.

HSUS Comments on File No. 715-1883

In addition to their general comments on the 13 applications (summarized in Section I above), HSUS provided comments specific to File No. 715-1883, which are summarized as follows:

1. HSUS does not support granting this permit. It is not clear that study of animals in captivity has sufficiently illuminated any of the hypotheses for the Steller sea lion decline such that research on wild animals is less pressing or more focal.
2. Because fur seals live an average of 25 years, (NPUMMRC undated) it seems likely that these animals will become available for display after the life of the experiment. The application should specify all requirements of 50 C.F.R. § 222.308(7), (8) for the transport of animals before a permit is granted.
3. Attempts should be made to partner with facilities already holding captive fur seals such that already captive animals can be used for these experiments rather than capturing additional animals from a depleted and declining stock.
4. The pressing need to study the proximal causes of ongoing declines in fur seals in the U.S. should not become an excuse for granting a permit to capture pups from the wild to be sent to Canada for scientific experiments and likely eventual permanent public display. This permit should not be granted.

Applicant response to HSUS comments on File No. 715-1883

The HSUS comments were forwarded to the applicant for response. The applicant's responses are attached (Attachment #13).

PR response to HSUS comments on File No. 715-1883

Regarding Comment #4; the applicant has submitted information in support of their request for a permit, with the exception of verification that the facility would meet standards comparable to those required under APHIS regulations. As noted in Section III below, PR1 is not recommending issuance of this permit until such verification is received.

Section III. Compliance with applicable federal statutes and recommendations for issuance

Compliance with MMPA

The applicants submitted applications which included responses to all applicable questions in the application instructions. However, some of the responses did not adequately or clearly address the information requested. PR1 therefore requested additional information from the applicants to clarify the nature of the proposed research. The applicants revised their applications in response to PR1's information request. The revised applications were made available to the MMC, APHIS, and the public for review and comment. PR1 forwarded public comments to the applicants for response. The applicants provided responses. The applicants assert that their research will further a *bona fide* scientific purpose consistent with the purposes of the MMPA and applicable regulations, and that the methods of taking would be humane. No intentional lethal take was requested but it has been determined (see Attachment # 4 for mortality estimates calculated based on tables in Final PEIS) that some mortality incidental to the research is unavoidable. The permits allow for a limited number of such research-related mortalities. The applicants assert that the results of the research will directly benefit the species or stock, or otherwise fulfill a critically important research need such that the lethal take is consistent with the provisions of the MMPA.

Compliance with ESA Section 10

With the exceptions noted under "Compliance with MMPA" above, PR1 finds that the permits: (1) were applied for in good faith, (2) if issued and exercised will not operate to the disadvantage of any endangered or threatened species, and (3) are consistent with the purposes and policies set forth in section 2 of the ESA. The regulatory permit issuance criteria referenced under "Compliance with MMPA" are applicable to marine mammals listed as threatened and endangered and are therefore relevant to compliance with issuance of permits for ESA-listed species.

Compliance with ESA Section 7

PR1 determined that issuance of the proposed permits was likely to adversely affect NMFS listed species, endangered Western Distinct Population Segment (DPS) Steller sea lions and threatened Eastern DPS Steller sea lions, but was not likely to adversely modify designated critical habitat.

The Permits Division consulted with NMFS Endangered Species Division regarding issuance of research permits pursuant to the Preferred Alternative described in the Programmatic Environmental Impact Statement (PEIS) for Steller sea lion and northern fur seal research (NMFS 2007). A programmatic Biological Opinion was prepared for that PEIS. After reviewing the current status of the endangered western population of Steller sea lions, the threatened eastern population of Steller sea lions, the environmental baseline for the action area, the effects of the proposed research program, and the cumulative effects, it is NMFS biological opinion that the research program, as proposed, is not likely to jeopardize the continued existence of the endangered western of Steller sea lion DPS or the threatened Steller sea lion DPS. Critical habitat for this species has been designated for listed Steller sea lions, however, the proposed action is not expected to affect that area and no destruction or adverse modification of that

critical habitat is anticipated. NMFS does not expect any other listed species under its jurisdiction to be taken incidentally to this research.

NMFS Biological Opinion contained the following conservation recommendations that would provide information that would improve the level of protections afforded in future consultations involving proposals to issue permits for research on endangered and threatened Steller sea lions and would minimize the effects of the proposed activities.

1. No permits should authorize the taking of adult female Steller sea lions until further investigations can be performed on surrogates or females from the threatened DPS to ensure that this critical life stage is not disproportionately affected by the proposed research activities.
2. Before authorizing any additional permits for activities similar to those contained in the proposed permits, the Permits Division should review the annual reports and final reports submitted by all researchers that have conducted pinniped research under permits received from this office as well as any data and results that can be obtained from the permit holders. This should be used to estimate the amount of harassment and other adverse effects that occur given the level of research effort, and how the harassment affects the life history of individual animals. The results of the study should be provided to the NMFS Endangered Species Division for use in the consultations of future research activities and presented as part of the proposed program review.
3. No permits should authorize the use of darted injectable sedatives for capture purposes until more comprehensive investigations can be made on the probable fate of non-captured and lost animals. Other, lower risk, methods of capture should be substituted.
4. NMFS should require more detail in annual and final reports to ensure that permit holders are identifying variables meaningful to evaluating research related risks. Reports should request:
 - a) For “number of animals taken” specify the number of individual animals present (e.g., during surveys or incidental disturbance) or captured within a permit year. If animals were recaptured, they should only be accounted for once in this column. Recaptures would be accounted for separately.
 - b) For “Dates of Activity” specify the date on which the activity occurred.
 - c) For “Locations of Activity” specify where the activity occurred with as much detail as possible. For example, give name of island on which animals were captured or harassed, or coordinates for surveys.
 - d) For “procedures” specify each procedure (e.g., method of capture, method of restraint, marks, types of instruments attached, types of tissue samples collected) performed on an individual animal during the capture or recapture event.
 - e) In order for NMFS Endangered Species Division to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the Permits, Conservation and Education Division of the Office of Protected Resources should notify the Endangered Species Division of any conservation recommendations they implement in their final action.

PR1 has implemented these conservation recommendations through denial of permits for the specified activities and placement of conditions in permits specific to reporting information.

PR1 will conduct the suggested review of annual and final permit reports and provide the results to the Endangered Species division upon completion.

NMFS also determined that issuance of permits as described in the Preferred Alternative of the PEIS was not likely to adversely affect U.S. Fish and Wildlife Service (FWS) listed species or designated critical habitat:

- San Miguel Island fox (*Urocyon littoralis littoralis*) endangered
- Northern sea otter, southwest Alaska DPS (*Enhydra lutris kenyoni*) threatened
- Southern sea otter (*E. lutris nereis*) threatened
- Bald eagle (*Haliaeetus leucocephalus*), lower 48 states threatened
- Short-tailed albatross (*Pheobastria albatrus*) endangered
- Marbled murrelet (*Brachyramphus marmoratus*) threatened
- Designated critical habitat for marbled murrelets
- Kittlitz's murrelet (*B. brevirostris*) candidate
- Steller's eider (*Polysticta stelleri*), AK breeding pop. threatened
- Designated critical habitat for Steller's eider
- Spectacled eider (*Somateria fischeri*) threatened
- Designated critical habitat for spectacled eider
- California brown pelican (*Pelecanus occidentalis californicus*) endangered
- California least tern (*Sterna antillarum browni*) endangered
- Western snowy plover (*Charadrius alexandrinus nivosus*) endangered
- Xantus's murrelet (*Synthliboramphus hypoleucus*) candidate

NMFS requested concurrence from the FWS regarding these determinations. In a letter dated May 24, 2007, the FWS stated it expects no effects on short-tailed albatross, Kittlitz's murrelets, Steller's eiders, and northern sea otters in Alaska as a result of the proposed research program (Consultation Number 2007-R-0102). In a letter dated June 8, 2007, the FWS stated that they concur with NMFS' determination that the proposed research (as described in a supplemental correspondence from NMFS on May 16, 2007) at San Miguel Island (CA), San Nicolas Island (CA), Santa Barbara Island (CA), St. George Reef (CA), Rogue Reef (OR), and Orford Reef (OR) is not likely to adversely affect the San Miguel Island fox, southern sea otter, bald eagle, short-tailed albatross, marbled murrelet, California brown pelican, California least tern, western snowy plover, Xantus's murrelet, or designated critical habitat for marbled murrelet and western snowy plover. FWS advised NMFS that further ESA consultation is recommended prior to implementation of future research activities anywhere in Washington, or at sites in California and Oregon not listed above.

Compliance with FSA

Those permits that involve research on northern fur seals of the Pribilof Islands are consistent with the FSA's provisions for the taking of fur seals for educational, scientific or exhibition purposes.

Compliance with NEPA

In reviewing individual permit requests, PR1 determined that the requested activities were consistent with the limitations of the Preferred Alternative in the Final PEIS (NMFS 2007), and as such issuance of the permits would not have a significant adverse impact on the human environment.

In its ROD (signed June 18, 2007) for the Final PEIS (NMFS 2007) NMFS indicated it would “phase in” implementation of the preferred alternative. As part of this phased implementation, NMFS will not permit “any energetic studies (i.e., drag buoyancy studies) on free-ranging individuals from the endangered western distinct population segment of Steller sea lions.” As such, PR1 is not proposing to permit the attachment of buoyancy and drag devices to free-ranging Steller sea lions to experimentally alter the cost of foraging by changing the hydrodynamic drag proposed, as proposed in File No. 881-1890 by ASLC.

In File Nos. 782-1889 (NMML), 358-1888 (ADF&G), and 881-1890 (ASLC) the applicants requested use of Telazol for capture and restraint of adult female Steller sea lions. As indicated in the Final Programmatic Environmental Impact Statement for Steller sea lion and northern fur seal research (NMFS 2007), additional studies are needed to demonstrate the safety of Telazol sufficient to allow its use in reproductive age female Steller sea lions. Therefore, PR1 does not recommend issuance of permits for this activity at this time. This also implements a conservation recommendation in NMFS Biological Opinion.

Recommendations for the 13 applications

A. Recommended for non-issuance: PR1 does not recommend issuing permits for the following activities:

1. Capture and surgical implantation of scientific instruments in free-ranging threatened and endangered Steller sea lions in Alaska, as proposed in File No. 1034-1887 (Horning). PR1 has determined there is insufficient information on the potential impacts of the proposed activity to determine whether permit issuance would satisfy all applicable federal laws. PR1 therefore recommends denial of a permit for this activity. Dr. Horning would instead conduct this activity as a Co-investigator under Permit No. 881-1890 (ASLC) on sea lions held at the ASLC for the “transient juvenile” studies. These animals would be monitored by veterinary and husbandry staff post-surgery and treated as necessary to resolve infections or other post-implant complications. Monitoring of these animals would also allow researchers to collect much needed information on the short-term impacts of this procedure. Denial of a permit to Dr. Horning for this activity on free-ranging sea lions does not prejudice decisions on future applications Dr. Horning may submit for this or any other research on marine mammals.
2. Capture, transport, holding at ASLC, and associated studies on threatened and endangered Steller sea lions in Alaska, as proposed in File No. 881-1890. ASLC would be permitted to capture, transport, hold at ASLC, and conduct studies on no more than 6 female sea lions at a time, rather than the 6 of either sex proposed. The USDA APHIS has informed NMFS that the space proposed by ASLC for holding the “transient” sea lions does not satisfy minimum space requirements for male Steller sea lions as specified in APHIS’ regulations. Holding

male Steller sea lions in this space requires a variance from APHIS. Issuance of a permit allowing holding of male Steller sea lions in a space not consistent with the AWA and APHIS regulations without such a variance would be in violation of the AWA. PR1 therefore recommends denial of a permit for this activity. Denial of a permit to ASLC for this activity does not prejudice decisions on future applications ASLC may submit for this or any other research on marine mammals.

3. Attachment of buoyancy and drag devices to Steller sea lion pups, juveniles, and adult females to experimentally alter the cost of foraging by changing the hydrodynamic drag, as proposed in File No. 881-1890. PR1 has determined that the applicant has failed to demonstrate that this activity is consistent with all applicable issuance criteria. Denial of a permit to ASLC for this activity on free-ranging sea lions does not prejudice decisions on future applications they submit for this or any other research on marine mammals.
4. Activities proposed in File No. 715-1883 (NPUMMRC) for removal of northern fur seals from the depleted Eastern Pacific stock with export to Canada for permanent captivity. The MMPA (16 U.S.C. Section 104(c)(9)) stipulates that no marine mammal may be exported for scientific research or enhancement purposes unless the receiving facility meets standards comparable to the requirements that a person must meet to receive a permit (i.e., comity). PR1 recommends deferring a decision on issuance of this permits pending confirmation from the applicant's government that all such comity requirements are satisfied. PR1 has determined that the proposed activity is otherwise consistent with all applicable permit issuance requirements and recommends issuance of the permit upon receipt of confirmation of comity. The applicant would not be required to submit a new application, undergo a new comment period, or additional environmental reviews under NEPA or ESA to receive a permit for this activity.
5. Captive breeding of and associated studies on Steller sea lions at the ASLC, as proposed in File No. 881-1745. The USDA APHIS has informed NMFS that they cannot determine, based on the information in the application and additional information supplied by the applicant, whether the ASLC has adequate space to house additional Steller sea lions as might result from the proposed captive breeding, nor can APHIS confirm that ASLC's facilities are adequate for housing breeding sea lions. PR1 therefore recommends denial of a permit for this activity. Denial of a permit to ASLC for this activity does not prejudice decisions on future applications ASLC may submit for this or any other research on marine mammals.
6. Use of Telazol for capture or restraint of Steller sea lions as proposed in File Nos. 782-1889 (NMML), 358-1888 (ADF&G), and 881-1890 (ASLC). As noted under "Compliance with NEPA" above, the Final Programmatic Environmental Impact Statement for Steller sea lion and northern fur seal research (NMFS 2007) stated that additional studies are needed to demonstrate the safety of Telazol sufficient to allow its use in reproductive age female Steller sea lions. PR1 therefore does not recommend permitting this activity for adult females until such studies have been completed. Further, PR1 does not recommend permitting this activity for Steller sea lions of other age/sex classes to implement a Conservation Recommendation in NMFS Biological Opinion recommending that "No permits should authorize the use of darted injectable sedatives for capture purposes until more comprehensive investigations can be made on the probable fate of non-captured and lost animals. Other, lower risk, methods of capture should be substituted." Denial of a permit to NMML, ADF&G, and ASLC for this

activity on free-ranging sea lions does not prejudice decisions on future applications they submit for this or any other research on marine mammals.

7. Intentional capture of adult female Steller sea lions as proposed in File Nos. 782-1889 (NMML), 358-1888 (ADF&G), and 881-1890 (ASLC). This implements a Conservation Recommendation in NMFS Biological Opinion recommending that “No permits should authorize the taking of adult female Steller sea lions until further investigations can be performed on surrogates or females from the threatened DPS to ensure that this critical life stage is not disproportionately affected by the proposed research activities.” Given the indiscriminant nature of some of the proposed capture methods (floating traps, purse seines, underwater lasso), the unintentional capture of adult females is possible, and likely unavoidable, under these three permits. However, the permits would contain a condition requiring that adult females unintentionally captured be released immediately. Denial of a permit to NMML, ADF&G, and ASLC for this activity on free-ranging sea lions does not prejudice decisions on future applications they submit for this or any other research on marine mammals.
8. Issuance of any of the proposed permits for the maximum period allowed under NMFS implementing regulations: i.e., five years. As noted in a Concurrence Memorandum from PR1 (dated June 14, 2007) regarding “Revised implementation of the Final Environmental Impact Statement, Steller Sea Lion and Northern Fur Seal Research Program (EIS), May 2007” NMFS has determined that the program would benefit from a stronger, more clearly articulated decision framework. To allow time for a program review and development of such a decision framework, PR1 proposed limiting issuance of permits for takes of Steller sea lions and northern fur seals to the 13 permits under consideration, and limiting the duration of those permits to three summer field seasons (i.e., expiration set for August 1, 2009).

B. Recommended for issuance: PR1 recommends issuing permits for the following activities through August 1, 2009:

1. All activities proposed in File No. 782-1889 (NMML) for threatened and endangered Steller sea lions range-wide, with the exceptions noted in (A) above.
2. All activities proposed in File No. 358-1888 (ADF&G) for threatened and endangered Steller sea lions in Alaska, with the exceptions noted in (A) above.
3. Activities proposed in File No. 881-1890 (ASLC) for threatened and endangered Steller sea lions in Alaska, with the exceptions noted in (A) above.
4. Activities proposed in File No. 434-1892 (ODFW) for threatened Steller sea lions in Washington and Oregon, except those activities for which the applicant withdrew their request.
5. All activities proposed in File No. 1049-1886 (Wynne) for endangered Steller sea lions in Alaska.
6. Activities proposed in File No. 1034-1887 (Horning) for threatened and endangered Steller sea lions in Alaska, with the exceptions noted in (A) above.
7. All activities proposed in File No. 715-1885 (NPUMMRC) for threatened and endangered Steller sea lions in Alaska.
8. All activities proposed in File No. 881-1893 (ASLC) for depleted northern fur seals in Alaska.
9. All activities proposed in File No. 715-1884 (NPUMMRC) for depleted northern fur

seals in Alaska.

10. All activities proposed in File No. 1118-1881 (Tribal Govt. St. Paul) for depleted northern fur seals in Alaska.
11. All activities proposed in File No. 1119-1882 (Tribal Govt. St. George) for depleted northern fur seals in Alaska.

All permits contain standard terms and conditions stipulated in the MMPA, ESA, and NMFS regulations. As required by the MMPA, these permits specify: (1) the effective dates of the permit; (2) the number and kinds (species and stock) of marine mammals that may be taken; (3) the location and manner in which they may be taken; and (4) other terms and conditions deemed appropriate. Other terms and conditions deemed appropriate relate to minimizing potential adverse impacts of specific activities (e.g. capture, sampling, etc.), coordination among permit holders to reduce unnecessary duplication and harassment, monitoring of impacts of research, and reporting to ensure permit compliance.

All permits contain the following limitations on permit amendments and the duration of the permits, consistent with the “Revised Implementation of the Final Environmental Impact Statement, Steller Sea Lion and Northern Fur Seal Research Program (EIS), May 2007” concurrence memorandum from PR1 (dated June 14, 2007):

- Condition A.1. Personnel listed in Condition C.1 of this permit (hereinafter “Researchers”) may conduct activities authorized by this permit through August 1, 2009. This permit expires on the date indicated, can not be extended, and is non-renewable.
- Condition H.4. For the duration of the permit, the Permit Holder/Principal Investigator may not request changes to the permit related to: the objectives or purposes of the permitted activities; the species or number of animals taken; or the location, time, or manner of taking or importing protected species.

All permits contain the following standard requirements for reporting, which also implements a conservation recommendation in NMFS Biological Opinion:

- 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.
- 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.
- An annual report must be submitted to the Chief, Permits Division by November 1st for each year the permit is valid. The annual report describing activities conducted during the previous permit year must follow the format in Appendix 2 of the permit.
- A final report must be submitted to the Chief, Permits Division within 6 months after expiration of the permit (February 1, 2010), 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.

- Research results must be published or otherwise made available to the scientific community in a reasonable period of time.

Permit No. 881-1890 (ASLC) contains the following additional reporting requirement related to the “transient juvenile program” to facilitate collection of information on the survival and disposition of Steller sea lions held for up to three months and receiving surgically implanted transmitters:

- Interim reports for the “transient juvenile program” activities described in Table 2 of Appendix 1 must be submitted to the Chief, Permits Division by June 1 and November 1 each year the permit is valid. The interim reports must follow the format in Appendix 3.

Appendix 3 of the permit stipulates that ASLC must provide the following information in these interim reports:

- Date and location of initial capture
- Copy of initial health exam
- Date and location of release, or if held for less than 3 months, date scheduled for release
- Copy of final health exam, or, if not yet released, copy of most recent morphometrics and assessment of overall condition
- Duration animal was tracked following release

The permits for activities in the wild contain the following conditions related to the manner of taking, which are intended to mitigate the potential adverse impacts of research on marine mammals that are the target of or may be incidentally harassed during the research:

- Except where disturbance during pupping season is expressly authorized, Researchers must not conduct any rookery activities until after the peak of pupping season.
[PR1 notes: This condition limits disturbance of a critical life history stage during a time when pups are particularly vulnerable to injury, abandonment, and mortality if the rookery is disturbed.]
- When working on rookeries, Researchers must, to the maximum extent practical, ensure pups do not gather in places or a manner that could lead to their suffocation, crushing, drowning, fluid aspiration, or other serious injury or mortality.
[PR1 notes: Permit reports indicate that pups, including those not handled by researchers, have died by suffocation, crushing, drowning, etc. during rookery disturbance. This condition requires adequate monitoring of pups to prevent this type of mortality.]
- Researchers must minimize the time lactating females are removed or otherwise separated from their dependent offspring as a result of research activities.
[PR1 notes: This condition minimizes the impacts of separating mother-pup pairs, including loss of suckling time (and provisioning of pups).]
- Researchers must take reasonable steps to identify pups of lactating females before attempting to immobilize a lactating female.
[PR1 notes: This condition minimizes the likelihood of causing pup injury or abandonment, and allows researchers to humanely provide for dependent pups in the event the lactating female dies during the research.]
- If a lactating female dies as a result of the permitted activities and her dependent pup can

be identified, Researchers must immediately contact the NMFS Regional Stranding Network Coordinator (SNC) and proceed as directed. If the pup cannot be identified or the SNC determines the pup is not a candidate for rehabilitation, the pup is to be counted as a permit-related mortality.

[PR1 notes: This condition allows orphaned pups to be humanely provided for in the event the mother dies during research.]

- f. If a pregnant female dies as a result of the permitted activities, both the female and the unborn pup shall be counted as permit-related mortalities.
[PR1 notes: This condition, in conjunction with the condition that limits research-related mortality, limits adverse impacts of research on marine mammal populations.]
- g. Researchers must capture and handle pinnipeds in groups small enough that handling and restraint time for each animal is minimized and all animals can be adequately monitored for signs of adverse reactions that could lead to serious injury or mortality.
[PR1 notes: Annual reports indicate pinnipeds have died (by suffocation and adverse reactions to anesthesia) while being restrained with insufficient monitoring. This condition reduces stress of handling and risk of mortality for individual animals.]
- h. Researchers must immediately cease attempts to approach, capture, restrain, sample, mark, or otherwise handle pinnipeds if the procedure does not appear to be working or there are indications such acts may be life-threatening or otherwise endanger the health or welfare of the animal. To the extent that it would not further endanger the health or welfare of the animal, Researchers may monitor or treat (e.g., administer reversal agents or attempt resuscitation) the animal as determined appropriate by the PI, CI, or attending veterinarian.
[PR1 notes: This condition reduces the likelihood of mortality for animals that are unduly stressed by the research.]
- i. Researchers must use aseptic techniques for collection of external tissue samples (e.g., swabs) or puncture procedures (e.g., venipuncture, flipper tagging) and use sterile techniques for surgical procedures and collection of internal tissue samples (e.g., blubber and muscle biopsy).
[PR1 notes: This condition minimizes likelihood of introducing novel disease causing pathogens, cross-contamination among animals, and risk of mortality or other adverse effects from infection post-sampling.]
- j. Researchers must use sterile disposable instruments (e.g., needles, biopsy punches) to the maximum extent practicable.
[PR1 notes: This condition minimizes likelihood of introducing novel disease causing pathogens, cross-contamination among animals, and risk of mortality or other adverse effects from infection post-sampling.]
- k. Researchers must limit the amount of blood collected to actual needs for sample analysis and not exceed three attempts (needle insertions) per site per animal, and not more than 1.0 ml blood per kg body mass per capture event.
[PR1 notes: This limitation on blood sampling is consistent with current veterinary guidelines for safe removal of blood from live animals.]
- l. When capturing or detaining animals in traps, pens, carriers, etc., Researchers must adequately monitor the animals to prevent injury, mortality, dehydration, and thermal stress.

[PR1 notes: Annual reports indicate pinnipeds have died when left unattended in traps, carriers, etc. This condition reduces the likelihood of this by requiring appropriate monitoring.]

- m. Researchers must make every effort to avoid capture of adult females in traps and nets. If adult females are inadvertently captured, they must be released immediately.
[PR1 notes: this implements a Conservation Recommendation in NMFS Biological Opinion]
- n. Researchers must not use remotely delivered drugs, including Telazol, for capture of animals.
[PR1 notes: this implements a Conservation Recommendation in NMFS Biological Opinion]
- o. Sedated and anesthetized animals should be monitored closely and not be released until they recover normal locomotor capabilities. When sedated/anesthetized animals are too large or dangerous to be held until fully recovered from sedation/anesthesia, they should be placed in secure sites where they will not be subject to physical harm or extremes of temperature, and can be monitored from a safe distance.
[PR1 notes: This condition reduces the risk of post-capture mortality by injury from conspecifics, accidental drowning, and other hazards present on and around rookeries and haul-outs. This condition also allows for researchers to respond should the animal fail to recover from sedation/anesthesia.]
- p. Researchers must take appropriate actions (e.g., disinfection procedures) for minimizing the introduction of new disease agents, vectors capable of efficiently transmitting indigenous dormant diseases or those not currently being effectively transmitted, and species that can serve as amplification hosts for transmitting indigenous diseases to other species.
[PR1 notes: This condition is self-explanatory.]
- q. 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 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. Any observed abandonment of a dependent marine mammal pup is to be reported to the NMFS Regional SNC.
[PR1 notes: This condition requires researchers to collect much needed information on the effects of research on these animals.]

For those activities for which permit issuance is recommended, PR1 has determined that the research is consistent with the purposes, policies, and applicable requirements of the MMPA, ESA, FSA, and NMFS regulations. NMFS issuance of the permits is consistent with the MMPA, ESA, and NEPA. It is believed that the research will further a *bona fide* scientific purpose and does not involve unnecessary duplication. PR1 believes the research authorized by these permits would not likely have a significant adverse impact on marine mammal species or stocks provided the mitigation measures described above are followed. For these reasons, I recommend that you sign the permits.

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Cc: PHF Nos. 782-1889, 358-1888, 881-1893, 881-1890, 881-1745, 434-1892, 1049-1886, 1034-1887, 715-1883, 715-1884, 715-1885, 1118-1881, 1119-1882