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The Humane Society of the United States

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To: Mr. Payne, Ms. Tammy Adams **From:** Sarah Uhlemann, Sharon Young

Fax: (301) 427-2521 **Pages:** 29 including cover

Phone: (202) 676-2334 (Sarah) **Date:** May 1, 2007

Re: Steller Sea Lion permits **cc:**

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These will also be sent via mail. Thanks so much Tammy! -Sarah

THE HUMANE SOCIETY OF THE UNITED STATES®

P. Michael Payne, Chief
Permits, Conservation and Education Division
Office of Protected Resources
National Marine Fisheries Service
1315 East-West Highway
Silver Spring, Md. 20910

Re: Application for Scientific Research Permits for Steller sea lions and Northern Fur Seals [72 FR 7420; 72 FR 13255]

May 1
~~April 30~~, 2007

Dear Mr. Payne,

On behalf of the more than eight million members and constituents of The Humane Society of the United States (The HSUS), I am writing to oppose the granting of most of the thirteen permits listed in this Federal Register notice. We find that the impacts of many of the protocols and procedures described in the permits were not analyzed in the Draft Programmatic Environmental Impact Statement (DEIS), that the numbers of procedures and geographic and demographic sampling described do not comport with units described in the DEIS, many of the permit applicants do not appear to have complied with conditions of previous permits, and research by some of the permittees does not meet standards mandated by the Marine Mammal Protection Act for "humane" research. We will first provide overarching concerns with the permits as a group and then provide comments on individual permits.

Overarching Concerns Affecting Most of the Permit Applications

1. Not all requested activities were analyzed in the DEIS

The HSUS submitted comments on the DPEIS. In our comments, we expressed concern that the DEIS had not analyzed all impacts to animals from past, current or foreseeably future activities. Indeed many of the permits request permission for activities not analyzed in the DEIS. Most notably, as we will discuss below, the Alaska Sea Life Center (File No. 881-1890) has requested permission to subject animals to a wide variety of procedures not even mentioned in the DEIS (e.g., novel scientific instruments) and a number of applicants seek to use deuterium oxide. This was not analyzed in the DEIS and should not be permitted. Any procedures whose impact was not specifically analyzed in the DEIS cannot be permitted unless and until the agency issues a supplemental EIS analyzing the impacts of the additional procedures. 40 C.F.R. § 1502.9(c)(1).

2. Not all permittees appear to have complied with conditions of their previous permits

As a condition of their permits, all permittees are required to submit annual reports of their activities (see DEIS 4-14 and Permit No. 881-1668-05 as examples). The general conditions state that annual reports must be submitted prior to April 1 of the following year, within 180 days of the completion of the research, or expiration date of the Permit, whichever occurs first. Given that the Steller sea lion research permits were vacated following the start of research activities, all permits and permit amendments effectively "expired" in May of 2006 when the court ordered them vacated, reports of activities to that date should have been received by your office within the time specified in the permits (e.g., by the end of November 2006). We have been unable to obtain evidence that all permittees have submitted the required reports of their activities. Further, the National Marine Mammal Lab (NMML) was issued a permit for research on Northern fur seals in San Miguel, with the condition that they report by December 2006 on their research. We have not been able to obtain a copy of their report to ascertain that it was filed properly and in a timely manner. Any permittee who has not submitted their annual, final or other required reports (e.g., reports of mortalities) should be denied a permit until such time as they have complied. Pursuant to the MMPA's regulations, violation of a permit is sanctionable by civil and criminal penalties. 50 C.F.R. § 216.40. Permittees that are unable or unwilling to comply with their past permits should not be rewarded with additional permits.

3. Not all permit applicants properly describe the hypotheses that their research will test nor the specific contribution of their research to the recovery or conservation plans

The MMPA only allows NMFS to issue research permits when the permit application shows the "taking is required to further a bona fide scientific purpose." 16 U.S.C. § 1374(c)(3)(A). NMFS cannot determine whether permit issuance will comply with this most basic MMPA requirement unless the applicant has provided a full description of hypotheses being tested. Further, for research to be permitted on *any* marine mammal, whether or not the stock is listed as depleted, threatened or endangered, the applicant must demonstrate that the proposed activity, in combination with other activities, will not likely have a "significant adverse impact" on the stock. 50 C.F.R. § 214.34(a)(4). It is not clear that all of the permit applications can meet this test, particularly given the D.C. District Court's determination that the original proposed EA would have had a "significant" environmental impact under the National Environmental Policy Act (NEPA), requiring the issuance of an EIS. Humane Soc. of the U.S. v. DOC, 432 F. Supp. 2d 4 (D.D.C. 2006).

Further, the standard for scientific purpose becomes more stringent when research is proposed for diminished populations of marine mammals. The MMPA prohibits NMFS from issuing permits for research on depleted stocks unless "the results of the research will directly benefit that species or stock, or that the research fulfills a critically important research need." 16 U.S.C. § 1374(c)(3)(B). Without a proper description of the researcher's hypotheses and an assurance that the methods being used will properly

investigate the hypotheses, it is impossible for the agency or the public to determine whether research will comply with the MMPA's express limitation on research on depleted species.

Finally, to be issued a permit for research on a threatened or endangered species, the applicant must demonstrate that the activity cannot be accomplished using a species or stock that is not listed as threatened or endangered, and the proposed research "in combination with other activities will not likely have a long-term direct or indirect adverse impact" on the species, will not "operate to the disadvantage" of the species, and will not cause "jeopardy" under the Endangered Species Act. 50 C.F.R. §§ 216.41(b)(5)(i), (ii); 222.308(c)(2); 16 U.S.C. § 1536(a)(2). Additionally, the research must 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." Id. § 216.41(b)(5)(iii). It is not clear that all of the permit applications can meet this test.

Some of the permit applicants have submitted clear, thorough and clearly valid research proposals. We note, for example that Dr. Kate Wynne (File No. 1049-1886) has provided an application that others might look to as an example of an appropriate and appropriately conservative model for research proposals. Others, such as the permits submitted by the Aleut Communities of St. Paul and St. George Islands appear well conceived and limited in approach. However this cannot be said for all permit applicants. For example, although a number of applicants make general references to the Steller sea lion recovery plan, simply asserting that research *will* address the hypothesis that nutritional stress is contributing to declines does not clearly demonstrate *how* a particular procedure or suite of procedures will illuminate aspects of this key issue. Thus some of the permits fail to provide the information necessary to meet extremely stringent application requirements for research on threatened and endangered species. See 50 C.F.R. § 216.41. We will comment further on specific permits but cite File Numbers 881-1890, 434-1892 and782-1889 as examples of this failure.

4. Not all proposed procedures meet the MMPA's standard for humane research

The Marine Mammal Protection Act (MMPA) mandates that scientific research be humane. 16 U.S.C. § 1374(b)(2)(B); 50 C.F.R. § 216.3 (a)(1). The MMPA defines the term "humane" in 16 U.S.C.§ 1362(4) as: a "method of taking which involves the least possible degree of pain and suffering practicable to the mammal involved." If researcher chooses to use a more invasive or risk-prone technique than one that fills the same purpose and need but is more risk-averse or less invasive, this research cannot be considered adequately humane. We note that although there are more risk-averse approaches available, some permit applicants have chosen more risk-prone approaches. For example, whereas the DEIS discusses the effective use of aerial photogrammetry to count pinnipeds, stipulating that it was found to be as reliable as the more risky use of drive counts, not all applicants wish to use it. For example, while Dr. Wynne (File No. 1049-1866) proposes to use this for her studies of population abundance and trends, other permittees (e.g. File No. 434-1892) do not and instead wish to rely solely on drive counts that are demonstrably more likely to cause disturbance, injury and risk of death than

aerial survey approaches which are used successfully with pinnipeds in most areas of the U.S. Further while some applicants (e.g., Trites and Wynne) propose to collect scat to investigate nutritional stress and seasonal variations in diet, other permit applicants propose invasive sampling of the digestive tract (e.g. enemas, stomach intubation, fecal loops) without discussion of why a less invasive approach such as scat analysis is not appropriate. If these other studies are justified, reasoning should be made clear and there should be a discussion of how their results will be integrated into the studies of scat analysis to provide a holistic picture. The NMFS should not permit the use of the most risk-prone techniques where there are clearly more risk-averse methodologies available. 50 C.F.R. § 216.34(a)(1) (the applicant must demonstrate that the activity is "humane and does not present any unnecessary risks to the health" of the animal).

5. Permit applicants request takes in categories not analyzed in the DEIS

The DEIS analyzed impacts to pups and non-pups, with non-pups being defined as animals older than 3 months of age. The number and impact of takes under each of its alternatives were calculated using this definition. However, some of the permittees request takes of animals using different criteria such that it is not clear that impacts can be projected or monitored as discussed under the DEIS. For example, the ASLC and NMML (File No. 881-1890 and 782-1889) request takes of what they call pups from 5 days to 2 months, and "juveniles" variously described as from 3 months to one year and or ">2 months through 3 years". It is not clear how NMFS will determine whether impacts fall within the limits calculated for categories analyzed in the DEIS if applicants are defining (and reporting) sampling of age classes different than those used in the DEIS.

Additionally, the DEIS did not analyze impacts to one sex over another, and the impact analysis charts in the DEIS assumed equal distribution of sampling effort across sexes (e.g., DEIS at 4-53). Whereas some of the permit applicants request takes by sex (e.g., 881-1890), others (e.g., 782-1889) do not specifically request numbers of each sex, but supply narrative that indicates that they intend to focus on adult females over adult males. The failure of the DEIS to consider unequal impacts makes it difficult to interpret population level impacts that may accrue from the permit applicant's preference for sampling adult females. In order for NMFS to understand whether the impact of all proposed permits will be within limits in the EIS, NMFS must require permit applicants to use and comport with categories used in the DEIS impact analysis. Alternatively, the agency must issue a supplemental EIS to analyze the effects of these additional issues. 40 C.F.R. § 1502.9(c)(1).

6. Use of darted Telazol appears inappropriate.

As noted in the ASLC permit application and in concerns expressed by NMFS the 2005 EA, Telazol is known to cross the placental barrier (EA at 25). It is not approved for use in a number of pregnant domestic animals. Although permits issued in 2005 and vacated by the court, prohibited the use of Telazol with adult females due to concerns ab out the potentially adverse effects of Telazol on fetal development and nursing pups, some of the proposed research (e.g. ASLC) propose the use of Telazol at times when females may be pregnant (June-August). The DEIS also discusses problems with an antagonist if

problems arise. Given hypotheses that include reproductive failure as one of the possible causes of decline in Steller sea lions, this procedure should not be permitted when females may be pregnant or are lactating.

Under alternative 4, the DEIS states that, "either studies would need to be conducted that demonstrated the safety of Telazol sufficient to allow its use, or new techniques/drugs would need to be developed for capture of this sex/age class.(DEIS at 4-49). No such study is proposed by any permit applicant yet they seek to use Telazol to capture females. The DEIS also acknowledges an increase in mortality likely from the use of "new technique development" involving the use of drugs (presumably including Telazol) in females "or their dependent pups." (Id.)

Further, we are concerned with adverse effects of darting of animals with Telazol. Indeed, information provided by permit applicants (e.g., NMML and ADFG) substantiate that there is a real and alarming risk to darted animals, which may respond by moving into the water or to inaccessible locations, making it impossible to determine their fates.

The NMML permit application, for example, indicates that a single animal died from darting, but of the 72 adults darted, 28 went into the water or to an inaccessible location, where their condition could not be monitored. It is disingenuous to state that only 1 died when the status of 28 could not be observed after darting. Further two of only 16 juveniles darted was observed to die subsequent to darting, with 9 of the 16 unobservable. This procedure (darting anesthetic into free roaming animals) should not be allowed.

7. The regulations require the **Final** EIS to be available during the comment period.

The MMPA's implementing regulations provide detailed procedure for receipt of research applications and for public participation. Specifically, once the permit office receives a valid and complete permit, the office must publish a notice in the Federal Register, including "a NEPA statement that . . . a final EIS has been prepared is available for review." 50 C.F.R. § 213.33(d)(iv). Clearly, NMFS must have a "final" EIS – not a proposed EIS – completed before the agency notifies the public of a permit application. This sensible procedure allows the public the opportunity to determine what the effects of the research are and use that information to comment on proposed applications. NMFS's issuance of a notice requesting comments on permit applications before the final EIS is complete violates the MMPA regulations and denies public participation.

Comments on Specific Permits

File #1049-1886 Kate Wynne, University of Alaska, Principal Investigator

This well-written proposal combines the efforts of two researchers into a single permit. It provides clear hypotheses that are being tested, their relation to the recovery plan and methodology that will address key questions being investigated. This proposal could serve as an example to other researchers. We recommend granting this permit.

File 119-1882 The Aleut Community of St. Paul Island

This permit proposes to collect samples from dead stranded or subsistence hunted animals and to engage in remote observations and disentanglement response. We note that the numbers of animals subjected to incidental harassment in the text (see page 2 for example) do not appear to match the numbers in the charts on pages 20-21. This should be checked and corrected. We do not oppose the granting of this permit.

File 118-1881 Aleut Community of St. George Island

This permit also proposes to collect samples from dead stranded or subsistence hunted animals. It also proposes remote observations and disentanglement response. The applicants state that they are actively pursuing a letter of agreement (LOA) with NMFS for disentanglement. The HSUS strongly encourages them to obtain the LOA. We do not oppose the granting of this permit.

File 434-1892 Robin Brown, Oregon Department of Fish and Wildlife, Principal Investigator

This permit is noticeably brief considering the scope of activities proposed. It mentions general goals in the recovery plan that it feels the research will address but provides no specific hypotheses or variables being tested. Instead it states in the most general of terms on pages 8-9 that the applicant seeks to "provide information" on vital rates. See 50 C.F.R. § 222.308(b)(4), (b)(5) (requiring applicant to provide a "detailed" description of the project and the need for the project).

The applicant is quite specific in requesting the capture and sampling of 10 adults and 200 pups. The application does not specify why all adults are subjected to all procedures but not all pups are (e.g., 25% of pups receive fecal loops and culture swabs, 80% of pups will have scientific instruments attached). 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." How he has arrived at this conclusion is unclear.

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. As noted above, aerial photogrammetry has been shown in literature (and substantiated by the DEIS) to be sufficient for accurate population census. It is proposed for use by other permit applicants, and has been used for years to census pinnipeds in most other parts of the country, yet this applicant continues to propose the use of drive counts, arguably the most intrusive manner of counting animals. This activity should not be permitted.

There are also some inconsistencies in statements. For example, page 14 states that culture swabs will be taken from "as many as 50 pups annually *and any other handled sea lions* with lesions..." [emphasis added] In fact, the applicant requests swabs for *only* 50 of the 200 captured pups and for all 10 captured adults. Thus he cannot take swabs

from "any other" animals regardless of whether they are showing signs of lesions. Further, page 18 states that skin biopsy, fecal loop and culture swab sampling will be collected while animals are under anesthesia, yet the applicant has previously stated that adult Steller sea lions will not receive anesthesia during branding (see page 15).

We also wish to raise the issue that adults will not receive anesthesia for branding. The rationale for denying anesthesia to adults under this permit is not made clear other than the vague statement that they can be "restrained more efficiently and safely using the squeeze cage." Other permit applicants [e.g. Horning and Trites] have discussed the pain involved and have stipulated that they would provide anesthesia during branding and other potentially painful procedures; it is not clear why this applicant would not. Denying anesthesia for painful procedures clearly violates the MMPA's requirement that research be humane, particularly in light of admissions in the DEIS that burns from branding result in the formation of blisters…and fluid seeping from the burned area and are accompanied by severe pain." [DEIS at B-22]16 U.S.C. § 1374(b)(2)(B); 50 C.F.R. § 216.34(a)(1). NMFS may not grant a permit unless the research practice causes the "least possible degree of pain and suffering practicable." 16 U.S.C. § 1362(4). In addition, 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.

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. The applicant fails to cite work by Scordino (2006) that documented pup mortalities that occurred in single year in Oregon at the Rogue Reef Refuge in the wake of branding and sampling activities. We also note the caveats in the DEIS that post-monitoring work is rarely done and that even animals that appear to be calm during handling can suffer post-capture myopathy. This fact, and work by Scordino, argue for the need for careful, systematic post-capture monitoring to occur.

We believe that this application provides insufficient and inconsistent 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. We recommend denying this permit at this time.

<u>File# 1034-1887 Marcus Horning, Oregon State University, Principal Investigator</u>

This permit is undeniably well written. It provides good background material, delineates the recovery plan objectives it seeks to address and has clear explanations regarding the variables and hypotheses being tested. In this regard other permit applicant could use it as a model.

On a minor note, some of the citations in the text appear to be missing from the bibliography. We did not have time or intent to search the document, but two citations in which we were interested were not listed (e.g., Link and Barker, 2005; Mulcahy & Garner, 1999). The applicant should check to be sure that the bibliography is complete.

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.

The applicant has requested the use of some procedures that were not discussed and whose effects and mitigation were not mentioned in the DEIS (e.g. use of deuterium dilution and some aspects of stable isotope analysis) and thus these procedures should not be used.

A major portion of this application is seeking permission to surgically implant two life history (LHX) transmitters in up to 100 Steller sea lions from the endangered Western stock over a period of five years. There is some confusion about sample size that requires urgent attention. The applicant's text summary on page one states that he seeks permission to implant devices in 20-50 Steller sea lions per year for a total of 100 animals. Yet the chart (table 1a) indicates that this is 100 animals *per year*, for an apparent total of *500 animals*. This discrepancy must be addressed. For purposes of these comments, we will assume that it is 100 animals over a 5 year period, as this number is also used elsewhere in the text.

The applicant would work in conjunction with the ASLC, which is also seeking to implant up to 30 LHX, that may comprise a subset of this applicant's desired sample size of at least 92 animals per year. Further, the application by the ASLC seeks to attach a multiplicity of devices to captured animals. We believe that the physiological stress of surgical procedures required for the LHX, and its attendant risk should preclude the attachment of other devices (e.g., buoyancy "challenges" and heart rate monitors) 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.

It is worth noting, however, that 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." (EA at 25) This procedure remains risky and we do not feel that it should be used in the field where animals cannot be monitored post-surgery.

We think it is commendable that the applicant seeks to assure that animals subjected to branding are provided with anesthesia, and he makes a sound case for its use. He also incorporates controls to prove the reliability of the methodology (e.g., implanting the

device in carcasses to test retrievability, using duplicate implantation to assure that there is reliability in data retrieval).

Having said this; however, we are concerned that this technology may not yet be appropriate for use with this species. The applicant states that six juvenile Steller sea lions were implanted with these devices prior to the permits being vacated by court order in 2006. His assertion that no tags have transmitted data (something that can only happen upon the death of the animal) means that all animals are still alive may or may not be true. He himself states that there is a concern with tags being released in rocky or other areas that may prevent or occlude signal transmission.

Further, there is uncertainty regarding sampling and use of various protocols. The capture location is said to be determined "3-6 months before field work commences" (page 17) and the permit applicant proposes to coordinate sampling with NMML, ADF&G and ASLC. Yet we note that the NMML permit application does not propose more than a few weeks notice of the location of sampling sites. Moreover, although this applicant wishes to be precautionary and avoid taking animals from a site that "has been disturbed or is expected to be disturbed in the near future by other researchers," (ibid) it will not be possible to assure this several months in advance if NMFS accepts other permittee proposals with shorter time frames and/or if the information in the DEIS is correct and research sites are not reported by most researchers until after research has already been conducted.

The target of this research is juvenile Steller sea lions, the demographic considered most at risk in some hypotheses of the decline. We understand that this is, therefore, the demographic most in need of study; however, the use of a procedure that has only been tried previously on 10 sea lions is risk prone at this time. The applicant seeks incidental mortality of up to 5 animals per year. If we assume that 20 per year will be captured (as it says on page 1and elsewhere in the application) then the mortality rate would be as high as 20% per year. Incidentally killing one out of every five animals is unacceptable. We wonder that this applicant's IACUC approved such a high death rate. We would prefer to see this methodology tried and shown to be risk averse in additional surrogate species such as additional trials in California sea lions (or Steller sea lions from the Eastern stock) before it is permitted for use with animals from the endangered Western stock, which is still declining and showing reduced juvenile survival in many of the proposed sampling areas.

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.

<u>File# 782-1889 John Bengtson/Thomas Gelatt, NMML, Principal Investigators</u>

This permit application has made good reference to objectives under the recovery plan and provides some justification for some sample sizes. Page numbers on the text would have been helpful to provide a guide to points of concern in comments on the application. In the copy we received, only the summary charts have page numbers.

Though Table 2 provides latitude and longitude for a variety of rookeries and haul outs, the summary chart (Table 1) generally states that sampling is "west of 144° W, AK" or "WA, OR and CA." This is not helpful in demonstrating that sampling is systematic, robust and non-duplicative in nature. This concern is magnified by some of the text asserting that there is greater concern with some areas than others with regard to the ongoing declines evident in portions of the range of Western DPS Steller sea lions.

We agree with the priority given to recommendations of previous work groups for additional study in key areas, however questions such as survivorship can effectively be addressed only with considerable re-sighting effort. There is no discussion of the proportion of effort dedicated to resighting previously marked animals nor is there consideration that a one-time sampling of an animal's body condition in service of investigating the nutritional stress hypothesis can only provide a snapshot of condition at a single point in time whereas understanding effects may require a more longitudinal study (e.g., re-capture and sampling of previously branded animals to monitor changes over time). We see no specific mention of resighting activity either independently or as part of other activities listed under the paragraph labeled section "b. Narrative Account of Research." Given the focus on juvenile survival and female fecundity that the applicant states are necessary under Activity 6, it would be helpful to have an explanation of plans for resighting effort.

We note that NMML states that it will notify the regional office at least one month prior to field work. However other applicants (e.g., see comments on Horning above) 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.

The applicant proposes both aerial surveys and drive counts of animals to collect data for abundance and trends in population. The NMML never explains why both are deemed necessary. Indeed other applicants (see Wynn above) only use photogrammetry from aerial surveys. This applicant should be limited to the use of that less risk prone method.

The applicants propose to capture from the Western DPS, 1100 pups (5-days to 2 months old) and 120 juveniles (2 months through 3 years) and 60 adults (over 3 years). We wish to note that the DEIS classified only pups and non-pups. Non-pups were defined as animals over 3 months of age. 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.

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. Anesthesia carries some attendant risks but also some clear benefit (analgesia and sedative) and the degree of its use should be clear in the summary chart. In fact, the text indicates that it will not always

be used. The application states that pups are provided gas anesthesia if they will be branded to "reduce stress on pups." Apparently there is little concern for adults. The applicant states in its discussion of adult captures that the "squeeze cage...restricts movement without the need for immobilizing drugs." In its discussion of branding juveniles, the application states that sedation will be provided "if appropriate at the discretion of the attending principal investigator or veterinarian." This seems inappropriate. Given the statements about the pain of branding in the DEIS and the commitment to its use by applicants such as Horning (not to mention its discussion by applicant Trites who proposes to study pain response in branded and non-branded animals) anesthesia should be used if research is to be humane. 16 U.S.C. § 1374(b)(2)(B); 50 C.F.R. § 216.34(a)(1) (research must be humane).

This application provides assurances that branding is not likely to lead to direct or indirect mortality, citing a study at Ugamak Island (section D). This fails to mention results of an Oregon study that is referenced earlier in the text. Further, we do not see plans for extended monitoring of animals to ascertain their fate, as occurred in Oregon.

With regard to capture techniques, the applicant proposes novel methods (e.g. an at-sea capture net developed by Goldsworthy for Australian sea lions) that includes a different type of net that is baited with fish to attract sea lions. This sort of technique (and the risk of further attracting sea lions to vessels) was not discussed or analyzed for impact or mitigation in the DEIS. It should not be permitted until properly analyzed. 40 C.F.R. § 1502.9(c)(1) (requiring supplemental EIS if proposed action changes or new circumstances arise).

The application states that a number of procedures will be performed on captured sea lions (e.g., blood collection, blubber biopsy, fecal loops, tooth extraction, bioelectrical impedance analysis pulling vibrissae, attachment of scientific instruments, etc) However, the applicant states that "criteria for each procedure will be dependent on the specific study objectives *at the time of capture*." The point of a research application is to specify the study objectives in advance and enumerate the procedures that are necessary to fulfill its goals. It is inappropriate to prevent analysis of impacts of a permit by failing to specify the "criteria for each procedure" in advance.

NMML has proposed to attach VHF transmitters to pups as young as 5 days of age (paragraph (i)). This seems inappropriately risk prone. The previous paragraph (h) on branding stated that pups older than 2 weeks are selected for post-natal survival studies so it is not clear why it is necessary to instrument pups this young. There appears no need to impair movement and risk mother-pup bonding of pups as young as 5-14 days of age by attaching hard antennaed instruments.

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. While it may be important to replicate such a study, we see no mention made of where or how researchers will return to the site. The Oregon study (Scordino 2006) was a

more traveled area (dead pups were reported by fishermen in some cases) and researchers returned multiple times to the site. If the applicant plans to do this, it is not clear in the permit application. If they do not plan to do this, it may impair the results of the study.

In this permit, the section on Effects on Stocks discusses the effects of anesthesia. It fails to include some of the caveats outlined in the DEIS (e.g., lack of reversal agents) and cites a study involving the use of darting (included as appendix Table 7) concluding that only 1.9% of sub-adult animals that "remained observable" died. But the Table indicates that of the 72 darted animals, 28 went into the water or to an inaccessible location, where their condition could not be monitored. It is disingenuous to state that only 1 died when the status of 28 could not be observed after darting. Further two of only 16 juveniles darted was observed dead, with 9 of the 16 unobservable. This procedure should not be allowed. . 50 C.F.R. § 216.34(a)(1) (the applicant must demonstrate the that activity is "humane and does not present any unnecessary risks to the health" of the animal).

We note that the applicants wish to use deuterated water. This was not discussed or analyzed for impact in the DEIS and should not be permitted. The applicant has linked its use with the use of bioelectrical impedance analysis (BIA). If the effective use of this procedure requires, as stated, "a mathematical relationship between values from BIA and other measures such as deuterated water" then subjecting animals to subcutaneous needles required by BIA may also be inappropriate or unnecessary. Unanalyzed procedures should not be allowed.

A number of the proposed procedures are slated for use only in Western DPS Steller sea lions (e.g., stomach tubes, enemas, BIA, ultrasonic imaging) and not Eastern stock. Other procedures are used on both (e.g. blubber biopsy, fecal loops, pulling vibrissae). This is not explained but should be.

The discussion of mortalities appears limited. See 50 C.F.R. § 216.34(a)(7) (NMFS may not issue a permit if the requested action will "likely result in the taking of marine mammals . . . beyond those authorized by the permit). Assertions of low levels of past incidental mortalities across all permits does not include a number of mortalities provided by NMFS in documents submitted to U.S. District Court as part of litigation on Steller sea lion permit issuance in 2005. Further, the applicant cites a 2002 EA concluding that the amount of accidental mortality would not have a significant impact on the stock. This was the same conclusion of the 2005 EA that was found inadequate in its analysis by a U.S. District Court judge. Humane Soc. of the U.S. v. DOC, 432 F. Supp. 2d 4 (D.D.C. 2006). This further highlights why the regulations require that a Final EIS be available to the public during the comment period, so the commenters be informed as to true environmental impact of the research permits. 50 C.F.R. § 213.33(d)(iv). After requesting an allowable incidental mortality of 5 Western DPS Steller sea lions per year in C.4, the applicants also state that they "expect that this number may be modified by the permit office during the permit application and evaluation process." The meaning of this sentence is unclear.

Although the applicants request 5 mortalities from the Western stock in its text, the summary chart (Table 1, page 45) states that 1 mortality is expected from the Eastern DPS and 10 mortalities are expected each year in the Western DPS, with an asterisk stating that it is not to exceed 5 in the Western stock. This is confusing to say the least and should be clarified.

The applicants state that capture related myopathy has not been observed in pinnipeds. This is a meaningless assurance. First, 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. Further, the cause of the documented deaths of branded animals found well after branding (e.g., in Scordino's study) has generally not been determined, but post-capture myopathy cannot be ruled out. There is every reason to believe that this phenomenon occurs in pinnipeds, as it has certainly been raised as a concern for both terrestrial and marine mammals that have been studied. The reference in the DEIS for deaths from capture myopathy (Fowler 1986) is from a report of a workshop on the status of northern fur seals and research. Bottlenose dolphins are at risk from capture myopathy (Colgrove, 1978) and it is of sufficient concern to stranded marine mammals of multiple species that it is addressed in the DPEIS for the marine mammal standing and health network. (NMFS 2007) There are myriad publications discussing this phenomenon in a huge array of taxa in which capture myopathy has resulted from transport, stress and struggle. (e.g., EFSA, 2004; NMFS/SWFSC; CCAC, 1984). It is inappropriate to discount it for Steller sea lions.

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.

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 (e.g., branding without anesthesia, use of duplicative drive counts when aerial photogrammetry is available, etc.) Errors and omissions need to be corrected and procedures and analyses should be consistent with those in the DEIS. Because this permit relies on procedures not in the DEIS, uses more invasive measures when less invasive procedures are available and relies for its understanding of the impact of invasive procedures on the somewhat arbitrary impact analyses in the DEIS, this permit should not be granted at this time.

File 358-1888, Matt Robus/Lorrie Rea, Alaska Department of Fish and Game, Principal Investigators

This permit is much improved over the previous permit submitted in 2005. It provides greater detail regarding the purpose and conduct of procedures and with regard to hypotheses being investigated within the recovery plan. The great similarity in text with the NMML permit application indicates that these two permit applicants have worked closely, though this permit application is better written in a number of sections including

section 3, hypothesis/objectives and justification. The use of SE Alaska as a control for sample matching seems well chosen. The summary charts at the end were difficult to follow, as the line spacing did not flow evenly from left to right, though this is an inconvenience to reviewers more than it is a flaw in the application.

As is the case with the NMML permit, there are procedures proposed that were not mentioned nor analyzed for impact or mitigation in the DEIS. These include the use of Evan's blue dye, deuterated water, novel capture techniques and the use of portable metabolic chambers. While we understand that metabolic chambers have limited ability to harm animals, they were not mentioned in the DEIS. Procedures can/should only be permitted if they were mentioned and analyzed for impact and mitigation in the DEIS. . 40 C.F.R. § 1502.9(c)(1) (requiring supplemental EIS if proposed action changes or new circumstances arise).

The section on determination of sample sizes (page 6) states that they were chosen based on 20 animals "per 3 month age category/bin." This does not appear to be reflected in the summary charts, nor is it adequately explained in the text. The applicants also explain that 300 female pups was a sample size adequate for providing data for the study. They outline the difficulty of determining sex prior to capture and then state that 300 pups total (likely to include substantially fewer than 300 females) will be captured. This number is stated to provide sufficient statistical precision while minimizing wide scale disturbance to the population. We commend the applicants for their concern with increasing disturbance but believe there should 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. If there is no means of assuring that a smaller sample size will be statistically significant (and no evidence is provided that it will be) then, to avoid risk to animals for no purpose, perhaps none should be branded until this can be assured.

On page 7, the applicants state they will coordinate with two other permittees engaged in capture activities. But there are others who have requested captures including Horning and Trites. There should be coordination with these permittees as well.

We commend the applicants for their commitment to brand-resighting observations. They are the only permit applicants who have discussed this key research activity in any depth. Vital rate studies are crippled without this component (see discussion in the DEIS) and it can also contribute to information on effects of branding.

With regard to capture and restraint, the applicants indicate that pups are "restrained by hand or by gas anesthesia if hot branded." Juveniles are restrained "physically or chemically (valium or gas anesthesia);" and adults are said to be "restrained physically, chemically, with gas anesthesia or a combination of the above based on the judgment of the attending veterinarian." (page 14) Yet page 16 indicates that adults are placed in a "squeeze cage that restricts movement without the need for immobilizing drugs." Page 23 states that all animals over 3 years of age will be branded under anesthesia. This varied verbiage and the summary charts (which lump both physical and anesthetic restraint

methods together), make it impossible to determine whether animals are receiving proper sedation and/or analgesia for branding and other potentially stressful and painful procedures. This should be clarified and all animals should be treated humanely. The section on mitigation (page 37) states that sedated animals will be "observed closely after gas anesthesia to ensure full recovery." The time period for observation was not indicated

Page 21 discusses the use of fecal loops and states that they will only be used on anesthetized animals, yet it proposes to use this procedure on virtually all captured animals over 2 months of age (Table 1). As noted above, it is not clear that all captured animals will receive anesthesia. Will the applicant avoid this procedure for all non-anesthetized animals and, if so, how will that affect sample size requirements? Or will all animals in fact be anesthetized, despite the conflicting verbiage in the sections under restraint and hot-branding?

We note that this applicant proposed both flipper tagging and branding. Applicant Horning argued that these temporary marks were duplicative and unnecessary for branded animals. Can the applicant discuss why they feel that procedure this is necessary?

With regard to text on pages 27 proposing darting animals with Telazol, we reiterate our comment made under the NMML permit regarding deaths of darted animals. Though few deaths were observed, a very large number of animals either moved to inaccessible areas or went into the water, making it impossible to learn their fates. The discussion provided is no assurance that this is not a risk prone method for delivering sedation, and provides evidence that it is in fact risky. It should not be allowed. See 50 C.F.R. § 216.34(a)(1) (the applicant must demonstrate the that activity is "humane and does not present any unnecessary risks to the health" of the animal).

The discussion of mortality beginning on page 33 omits discussion of the paucity of post-procedure monitoring. Given the Oregon study, cited by this applicant, that found significant differences in survival of branded pups, the discussion of previously noted deaths is not sufficient assurance that additional deaths did not occur in the absence of subsequent 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.

We appreciate the appendix that discusses branding and resighting and are pleased to see that there has apparently been an increase in resighting activities such that vital rate estimates are being generated with greater precision that previously (see DEIS discussion on the lack of effort since 1975 and the inability to determine survivorship for adults). 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. The discussion also omits mention of Scordino's results from an Oregon study that found adverse effects from branding of pups that led to increased mortality. 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. There is no accounting for mixed reviews of the effects of branding of elephant seals on Macquarie Island and the banning of this practice by the governments.

We appreciate the greater attention to describing the methods and their relation to hypotheses being tested. We support the need for additional brand re-sighting research. Some of the procedures proposed were not mentioned in the DEIS and should not be allowed. The uncertainties that are apparent in the DEIS undermine the statements in this application on the likely effects of this permit. We do not recommend granting activities other than the brand resighting efforts and other non-invasive procedures until such time as deficiencies in the DEIS are remedied.

File 881-1890 Tylan Schrock/Donald Calkins, Alaska Sea Life Center (ASLC), Principal Investigators

This permit involves a number of procedures to be used on free-ranging animals and on temporarily captive individuals. Many of the procedures that are proposed were never mentioned in the DEIS nor was their impact and/or mitigation discussed. . See 50 C.F.R. § 216.34(a)(1) (the applicant must demonstrate the that activity is "humane and does not present any unnecessary risks to the health" of the animal).These include, among others: "labeled water dilution," the use of buoyancy challenge devices, use of metabolic chambers, and the use of a remote-controlled turtle-like vehicle to obtain samples and measure body condition (though we find this approach intriguing). Other instrumentation not discussed in the DEIS includes attachment of sensors to record jaw opening and closing, subcutaneous implantation of heart rate data logger, stretch sensors for measuring breathing, glued-on air-flow sensors, heat flux sensor and stomach temperature sensor "pills" whose retrieval is not discussed. These procedures, which were not discussed in the DEIS and whose effects and mitigation are not reviewed but may have a substantial negative effect on the individuals, and thus the population, should not be permitted.

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 (see, for contrast, Wynn, ADFG and Horning) Discussion in the text provides vague reference to the recovery plan and NRC recommendations (e.g. page 5) but provides no specific information as to how these particular procedures or sample sizes will inform the information needs identified in the recovery plan. This is a serious omission, because NMFS may not grant a permit for research on a depleted or listed stock unless the research "fulfill[s]" an objective from the recovery plan or otherwise fulfills a critical research need. 50 C.F.R. § 216.41(b)(5)(iii). Merely mentioning recovery plan objectives without discussing how the proposed research specifically relates to an objective in the plan does not provide NMFS or the public with sufficient information to determine whether the research will "fulfill" a research need. Id. § 216.41(b)(5)(iii).

Both this applicant and Horning 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. 50 C.F.R. § 222.308(c)(10) (to issue a permit, NMFS must consider "how the applicant's needs, program, and facilities compare and relate to proposed and ongoing projects"). This assures a means of limiting effects and also assures that the multiplicity of procedures proposed by this applicant are not added to surgically challenged animals used in the LHX study. Horning stated that the purpose of the study was to monitor behavior of animals. We believe that capture and holding of animals for weeks at a time, subjecting them to anesthesia, invasive procedures and altered diet (as well as possible additional instrumentation) may compromise the validity of data on foraging and other daily behaviors as animals re-acclimate to the wild and forage naturally after their recovery.

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. For example, the permit must supply the name and "qualifications" of the transport company, the length of time in transit, a description of the pen or container at capture cite and during transport, a statement whether an vet or other qualified person will be there and a description of why that person is qualified, and specifications about care (dimensions of the pool the animals will be held in, the amount and quality of the water, the diet, sanitation, and qualifications of the staff), and a "certification" from a vet or recognized expert saying the transport/holding will be adequate. 50 C.F.R. § 222.308(7), (8) These required assurances should have been, but were not, provided as part of this application which seeks to capture animals and move them to the ASLC facility. This information should also be specified clearly in File #881-1745 below, also by ASLC.

Task 1 under this permit is the study of free-ranging Steller sea lions from the Western DPS. This would affect up to 610 animals (page 2). No justification was given for the sample size nor do the summary charts appear to substantiate this number. This should be clarified. 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.

As noted above under NMML and ADFG, and in the preamble, darting with Telazol is inappropriate. The NMML provided a chart and information showing that, although documented deaths from darting were low, a high percentage of animals either went into the water or to inaccessible areas making it impossible to monitor their fate. Deaths have been documented. There are additional concerns with the use of Telazol, which does not (according to the DEIS) have a reliable antidote. See 50 C.F.R. § 216.34(a)(1) (the applicant must demonstrate the that activity is "humane and does not present any unnecessary risks to the health" of the animal).

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.

Task 2 also studies free-ranging animals. Of these animals, up to 30 may be held captive for up to 3 months (see comments on Task 3 below).

Free-ranging animals 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. A variety of instruments are proposed, including satellite-linked dive recorders and 5 juveniles will have video system data loggers and data transmitters. The applicant must make clear which combination of instruments are proposed for attachment so that NMFS and external reviewers can be assured that the combination is appropriate for undertaking the proposed investigation and that they will not unduly compromise the animal. The MMPA's regulations expressly require that each permit application provide a "description of the manner of taking for each animal, including the gear to be used." 50 C.F.R. § 222.308(b)(6)(i) and, although a variety of instruments are described, the combination of their use (and thus the hypothesis being addressed and the relative risk to animals) are not specified.

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.

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.

The discussion of scientific instrumentation on pages 30-32 details a number of instruments that can be attached to juvenile Steller sea lions in various combinations. These include: data loggers to record depth swim speed and acceleration (attached at 3 points on the animal), digital camera, video camera, sensors for jaw opening, stomach temperature sensor "pills," subcutaneously attached heart rate logger, straps around the chest to measure breathing, air flow sensor, heat sensor and buoyancy "challenges." The applicant stresses on page 32 that no animal will receive more than a head-mounted instrument, a mid-dorsum mounted instrument package, a stomach temperature "pill" and a third package of a satellite transmitter and VHF instrument package glued to the fur. In other words, a single animal can be subjected to the insertion or attachment of 5 instruments. 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). Nor does this application 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). The applicant must be more specific about the criteria it will use for determining which instrument or combination of instruments will be chosen.

Clearly these instruments are for different purposes. There is no explanation of the procedures sufficient to determine whether a variable number and combination of devices will yield sufficient information of sufficient quantity or quality to inform a significant hypothesis regarding nutritional stress. That is, if an animal has a head-mounted jaw opening sensor attached to its head, breathing sensor straps on its midsection, a stomach temperature sensor, and a VHF and satellite transmitter pack; how will that relate to data from a different animal that may have a head mounted digital camera, a heart rate logger, a stomach temperature sensor and a VHF transmitter pack or another animal that may have a head mounted jaw opening sensor, a heart rate monitor, a stomach temperature sensor and the VHF package? Since instrumentation will vary (and may or may not include the buoyancy challenge devices that are described in the application) how will data from various combinations of instrumentation be integrated and/or provide a robust sampling?

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? How can the applicant assure that the various combinations of procedures will not have adverse cumulative or synergistic effects on the animals? Further, 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. The applicant should check to assure that sample sizes in both places are the same and have a scientifically determined basis.

This proposal would also subject animals to bioelectric impedance analysis (BIA). Other applicants (e.g. ADFG) have stated that this 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 used of deuterium oxide was not analyzed in the DEIS and thus should not be permitted.

Task 3 involves the capture of up to 30 juvenile (1-4 year old) Steller sea lions to be held captive for up to 3 months for the purpose of multiple sampling procedures and forced dietary changes. 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.

We also wish to point out that this application more than doubles the number of animals previously permitted for this type of study. We 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 (file #881-1745). Although it is up to APHIS to determine suitability of housing for captive animals, the MMPA regulations require the permit application to describe the containment facility in detail and provide a

certification from a licensed veterinarian or other expert that the facility is adequate to provide for the animals well-being. 50 C.F.R. § 222.308(8). 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.

We do not recommend granting this permit. Until all procedures have been discussed and their impacts and mitigation assessed as part of the DEIS, much of the applicant's proposed research cannot be permitted with unknown and unanalyzed impacts. The applicant should supply hypotheses being tested as other permit applicants have done and should clearly relate procedures to the hypothesis being investigated (e.g., animals with slower rates of breathing and lower body temperature are more or less likely to forage effectively, or animals diving to specific depths over specific time periods are more or less likely to be effective in foraging). Given the large number of novel procedures being proposed, and the multiplicity of devices proposed for attachment to animals, there should be a justification for them and none is provide other than the vague assurance that they relate in some unspecified manner to the investigation of nutritional stress as a contributor to ongoing declines. Until and unless there is a clear reason for the specific research protocols being proposed, they should not be permitted.

File #- 881-1893. Russel Andrews, ASLC, Principal Investigator.
This applicant proposes to capture northern fur seal pups during their first year at sea and monitor their movements via satellite telemetry to assist in correlating movements with habitat usage and key habitat features.

It is clearly important to understand the questions being investigated by this permit -- where animals are dispersing, how they use habitat and what role habitat sufficiency or interactions with commercial fisheries may play in the ongoing declines. There are clear hypotheses being tested. It would be helpful to explain how some of the procedures proposed for captured animals relate to the hypotheses being tested. (e.g., how some of the invasive sampling protocols specifically relate to investigating the three hypotheses regarding habitat use described on pages 6 and 7 of the application). If these procedures are not clearly enlightening the questions being informing the testing of these hypotheses, they may be subjecting animals to unnecessary additional stress or potential for harm.

We appreciate the applicant's candor in admitting that the actual number of mortalities that may result during capture, sedation and restraint is not clear and the admission that it may be higher than the number of mortalities stated (0.08). The applicant states that this "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).

The sample size (50 pups and 200 pelagically captured fur seals of mixed ages) 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. As noted previously, 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 (i.e. how will the use of fecal loops, bioelectrical impedance analysis and other such procedures illuminate the three hypotheses that: fur seal pups migrate to the same areas as adult females, that the diving behavior of pups is dissimilar to adults or that there are correlations between distribution and physiographic and hydrographic features that may concentrate zooplankton and micronekton stocks?). In fact three of the procedures (i.e., the of bioelectric impedance, ultrasonic imaging and isotope dilution) are being used redundantly, largely to correlate/validate their results with one another in measuring the same variable of body condition.(page 11) This is not part of any hypotheses being proposed. This may be a worthwhile study, but it was not part of the initial description of the purposes of this permit. Further, although stomach temperature telemetry has been used on Steller sea lions, its use and effects on fur seals is not known. If the safety and efficacy of the use of this technology is part of what is being tested, it should be so stated in the permit.

The applicant's response to the form's NEPA considerations requires expansion. One response, involving identification of new or experimental protocols in the permit application, should more clearly discuss the proposed evaluation of the correlation between various tools to evaluate body condition (as discussed above) as well as the fairly novel use of stomach temperature sensors in this species.

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 (e.g., page 12 states that they may be administered "*under the supervision* of a veterinarian *or* an individual that [sic] has received training from a veterinary anesthetist..." Thus it appears that a non-veterinarian may be supervising administration of anesthesia by a person with even less training. This is inappropriate. See 50 C.F.R. § 216.34(g) ("Individuals conducting activities authorized under the permit must possess qualifications commensurate with their duties . . , or must be under direct supervision of a person with such qualifications.)

As noted above, 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. We also wish to point out that isotopic water dilution (deuterated water) was not analyzed for impact in the DEIS and thus cannot be permitted.

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. The NMFS should also consider that this permit proposes activities and technologies similar to those proposed by Trites (File # 715-1884), though Trites' tags are apparently of a different design. To avoid unnecessary duplication of effort and potential for additive effects on the population, we believe that a single permit should be granted for investigating the distribution of fur seals relative to hydrographic features and the distribution of commercial fisheries.

File # 715-1885 Andrew Trites, NPUMMRC, Principal Investigator

This permit proposes to investigate the physiological indices of pain caused by branding and sampling procedures conducted by other researchers. It is designed to inform mitigation of discomfort or injury and appears worthwhile. We would like to have seen more specific information on the hypotheses being examined for the scat analysis. For example, what does the applicant expect to see in their examination of adrenal and thyroid hormones that will inform whether or not nutritional status is playing a role in the decline? The applicant also states that he will inform NMFS as to sampling locales prior to conducting research. As we noted in our comments on the DEIS, it would be helpful to specify locales at the time that a permit is issued to avoid duplicate sampling of areas by multiple researchers. This permit application appears well founded.

File #715-1883 Andrew Trites, NPUMMRC, Principal Investigator

This permit proposes temporary captivity of northern fur seal pups "approaching weaning age", six females of which will be taken to Vancouver for permanent captive study and likely captive display. Although this permit is well written, we do not support granting it. 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. Thus it is not clear that it is warranted here. See 50 C.F.R. § 1374(c)(3)(B) (to research on a depleted stock, "the results of the research [must] directly benefit that species or stock, or that the research fulfills a critically important research need").

There is discussion of the transport of the pups to the Vancouver Rehabilitation Center for a temporary quarantine before moving them to the "Species at Risk Laboratory" (described on page 25 as an off-display area of the Aquarium). Page 27 states that the research will take "at least 4 years" and that animals will "become a long-term scientific resource" that is "not suitable or feasible to release back into the wild." 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. As noted above in our comments on the ASLC proposal, the application should specify all requirements of 50 C.F.R. § 222.308(7), (8) for the transport of animals. While he provides greater detail than was provided by ASLC, there are specifics lacking in the proposal (e.g. qualifications of the transport companies, time in transit, etc.) This information should be provided to NMFS before a permit is granted.

There are facilities that already have captive northern fur seals (including Mystic Aquarium). Attempts should be made to partner with facilities 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. Vancouver Aquarium (the ultimate destination of 6 of the captured pups) has rehabilitated fur seals in the past and rehabilitation animals also might be more suitable for studies of diet. 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.

File# 715-1884 Andrew Trites, NPUMMRC, Principal Investigator
This permit involved the capture and sampling of northern fur seals including attachment of satellite transmitters, vital rate monitoring and age determination for demographic studies.

This permit application has clear objectives, though it does not specify hypotheses being tested. As was the case with the ASLC application (file # 881-1893)) the applicant seeks to place transmitters on northern fur seals to study distribution and habitat use, in particular, he wishes to examine spatial overlap with commercial fisheries operations. The tags proposed for use under these two permits appear different in design, operation and purpose and it is not clear how the data from the different studies will be integrated (if at all). The NMFS should consider issuing a single permit for the activity described in activity 1 under this permit to avoid duplication of effort and assure that all data being collected are done systematically and compatibly for maximum utility and minimal impact.

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. Females will carry 3 tags for 2-4 weeks before being recaptured to download 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. The charts on page indicate that 2 of these animals may die as a result of these activities (i.e., 6%). Since this activity was conducted in 2005 and 2006 under another permit, it would be helpful to know whether this is an actual result of previous experiments. This is a rate that is higher than that specified in the DEIS for this type of activity (DEIS at 4-52- 4-54). Because lactating females are specifically chosen, killing two of the 35 animals captured and/or sampled would orphan pups. This alarming consequence is not explicitly mentioned in the permit. Further the applicants state that one possible adverse effect is that mothers and pups fail to reunite (page 24). There is no discussion of how this will be handled if it occurs

Activity 2 involves the capture of 200 fur seal pups from St. Paul Island for tagging with flipper tags as part of a mark-recapture study to establish vital rates. Captured pups would be weighed and measured and subjected to a variety of research protocols.
Up to 100 adult females would also be captured. The discussion of this activity states that the applicants "are considering three approaches to capturing adult females." They have not determined which to use and state that "an alternative approach might be to use a 'squeeze cage' "as has been used with Steller seal lions." They are unclear how they plan to capture the animals. They state that they will consult with NMFS biologists and tribal governments when considering which approach to capture and holding is most advisable. This is inappropriate. The MMPA's regulations require that each permit contain conditions delineating the "manner in which marine mammals may be taken." 50 C.F.R.

§ 216.36. Consultation and selection of the most effective and risk-averse method should happen *before* being granted a permit. The applicants state that "other protocols *that may be instigated* include collecting skin samples, swabbing lesions [and orifices]." Sampling protocol should be specified in advance and clearly related to the hypotheses being investigated to assure appropriate methodology and robust sampling design.

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.

The applicant also proposes to inject tetracycline to mark teeth and bones. The protocol requires recapturing for the purpose of validating accurate age measurements in unmarked animals. It is thus for a very different purpose than any stated in the objectives of this permit. This procedure was not analyzed for impact in the DEIS (see Appendix B) and should not be permitted.

Activity 3 involves assessing age and body condition of dead males that were killed as part of the subsistence harvest at St. Paul and St. Georges Islands. We have no objection to this portion of the study.

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.

File # 881-1745 Tylan Schrock, Shannon Atkinson, ASLC, Principal Investigators

This permit proposes the captive breeding of Steller sea lions. As mentioned earlier, it is not clear that this applicant has sufficient space at their facility to properly house animals under APHIS guidelines. As noted, the NMFS cannot issue a permit until and unless the facility received all necessary approvals from APHIS. This permit application is premature. 50 C.F.R. § 222.308(c)(10) (to issue a permit, NMFS must consider "how the applicant's needs, program, and facilities compare and relate to proposed and ongoing projects").

Having said that, we wish to offer some critical comments on the proposal. 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." Id. § 216.41(b)(5)(iii). Justification for various procedures and clear discussion of the potential consequences of its activities are lacking. For example, Page 11 asserts that they "have never heard any reports of

anesthetic symptoms or other complications in pups of immobilized Steller sea lions" and then cite a single anecdotal observation at Lowrie Island. They should conduct a thorough literature search of anesthetic effects in this and similar species rather than relying on this single bit of anecdotal evidence. The application should be supplemented.

We also find it interesting that 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) Applicant ASLC cannot have it both ways. Either the wild studies provide valuable insight into reproductive members of the population with little stress and risk to reproductive and/or nursing mothers as stated in the earlier application or they do not.

The summary charts accompanying the application show a number of alterations under takes/animal/year, evidenced either by newly bolded language or strikeouts of previous, smaller numbers. 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). The justification should be, but is not, adequately explained in the application.

Further there is insufficient justification provided for breeding additional long-term captives as a means of providing insight into free ranging animals. Their restricted mobility, artificially altered diets and additional artificialities that are a necessary consequence of captivity are likely to limit the insights that can be gained. 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. 50 C.F.R. § 222.308(c)(10) (to issue a permit, NMFS must consider "how the applicant's needs, program, and facilities compare and relate to proposed and ongoing projects").

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. Is it for space reasons? Concerns over aggression? A preference for keeping younger animals? No valid answer, nor indeed any answer, is provided in the application that would justify producing four newly born permanent captives, thus necessitating the transfer of four current captives.

The applicants state that captive born offspring of long-term captive mothers "may participate in valuable scientific studies." The basis for and nature of the studies are entirely unclear. Page 12 simply states that "pups produced during this study will play an important and *evolving role* in fulfilling the ASLC research mission." 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.

Further the number and purpose of animals involved in inter-institutional transfers is confusing. Though it is clearly stated on pages 7 and 17 that four animals may be transferred, the verbiage on page 21 indicates that the transfers involve four adults, the production of 4 pups "as well as 3 adult females transferred from Mystic and/or Oregon Coast Aquarium, or imported from Vancouver Aquarium." Which animals are being proposed for transfer to substitute for or add to which current captives? The application is not entirely clear. Page 21 makes it appear that 3 current ASLC animals will be transferred (presumably after breeding, but this is not clear) and the facility wishes to import an animal from Mystic Aquarium. 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? For example, are some current captives being transferred so that others can be bred? If so, then this conflicts with the activities described in the permit. 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?

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.

Conclusion

As we explained in detailed in our comments submitted April 2, 2007, the programmatic DEIS for these permits is entirely lacking in analysis and justification of effects for various research protocols. Many of the procedures proposed by permit applicants have been used in the past but were not counted in the DEIS analysis of effects nor was there discussion of their additive or synergistic effect on animals nor any mitigation that might be required. Additional novel protocols have been proposed (e.g., capture methods, various new devices for attachment to animals, etc.). The applications were on file with NMFS at the time that the DEIS was being prepared and all procedures should have been analyzed. 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.

Had the DEIS properly analyzed the effects of all procedures and the cumulative and synergistic effects of the research program into which these permit applications fit, there are a number of permits that are clearly justified, as we have commented above.

However, other applications appears to be unjustified, with little if any hypothesis testing provided and no discussion as to how their methods will clearly illuminate causes of recent past or ongoing declines and means of mitigating them. Many of these permit proposals require additional information to supplement the applications in order to be sufficiently complete or to comply with the MMPA's requirement that research be bona fide and humane.

Given the inadequacy of NMFS' Draft EIS and the 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 permits will not "operate to the disadvantage" of any species.

Sincerely,

Sharon B. Young
Marine Issues Field Director

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