

I. Application for a Permit for Public Display under the Marine Mammal Protection Act.

II. Date of Application: August 9, 2007

III. Applicant:

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IV. General Description of the Marine Mammals to be Taken and/or Imported and the Proposed Activity

A. Statement of Work

This is an application to take releasable stranded pinnipeds. Six females and two males of each species over a five-year period for a maximum of eight otariids and 20 phocids are being requested. Species for consideration include California sea lions (*Zalophus californianus*), harbor seals (*Phoca vitulina*), grey seals (*Halichoerus grypus*), harp seals (*Phoca groenlandica*) and hooded seals (*Cystophora cristata*) from stranding facilities located on the Alaskan coast, west coast and northeast coast of the United States. Mystic Aquarium will always consider taking a non-releasable animal first and each animal will be evaluated on a case by case basis. There will be no non-target marine mammal or ESA-listed species that will be incidentally taken during these activities. The purpose of this activity is to increase our current population of pinnipeds for public display and opportunistic non-intrusive research.

B. Summary of Marine Mammals to be Taken:

1. Target Species:

- California sea lion (*Zalophus californianus*) from the Pacific coast of the U.S.
- Harbor seal (*Phoca vitulina concolor or richardsi*) from the Alaskan,

Pacific or Atlantic coast of the U.S.

- Hooded seal (*Cystophora cristata*) from the Atlantic coast of the U.S.
- Harp seal (*Phoca groenlandica*) from the Atlantic coast of the U.S.
- Grey seal (*Halichoerus grypus*) from the Atlantic coast of the U.S.

## 2. Non-target Species to be taken

We are requesting stranded animals directly from rehabilitation facilities and therefore will not be taking any non-target species.

## 3. Status of Affected Stocks

We are requesting to take stranded, releasable animals, not captured from the wild. These animals would have already died in the wild population if not for human intervention, and are therefore not affecting the wild populations by their removal to captivity. The information provided below is taken directly from the Marine Mammal Stock Assessment Reports on the NMFS website. The reports and citations can be at

<http://www.nmfs.noaa.gov/pr/sars/species.htm>

### **California sea lions**

Lowry et al. (1992) concluded that there was no evidence of a density dependent signal in counts of California sea lions between 1983 and 1990, and that it was not possible to determine the status of this stock relative to the Optimum Sustainable Population (OSP). They are not listed as "endangered" or "threatened" under the Endangered Species Act or as "depleted" under the MMPA. They are not considered a "strategic" stock under the MMPA because total human-caused mortality (1,483 fishery related mortalities plus 78 from other sources) is less than the potential biological removal (PBR) (8,333). The total fishery mortality and serious injury rate for this stock is not less than 10% of the calculated PBR and, therefore, cannot be considered to be insignificant and approaching a zero mortality and serious injury rate. The population has been growing recently at 5.4% to 6.1% per year.

### **Harbor seals**

#### ***Western Atlantic***

The status of the western North Atlantic harbor seal stock, relative to its OSP, in the U.S. Atlantic is unknown, but the stock's abundance is increasing. The species is not listed as threatened or endangered under the Endangered Species Act. Total U.S. fishery-related mortality and serious injury for this stock is not less than 10% of the calculated PBR and, therefore, cannot be considered to be approaching zero mortality and serious injury rate. This is not a strategic stock because human-related mortality and serious injury does not exceed PBR.

#### ***California***

A review of harbor seal dynamics through 1991 concluded that their status relative to the OSP could not be determined with certainty (Hanan 1996). They are not listed as "endangered" or "threatened" under the Endangered

Species Act nor as "depleted" under the MMPA. Total fishing mortality cannot be accurately estimated for recent years, but extrapolations from past years indicate that fishing mortality (388 per year) is less than the calculated PBR for this stock (1,896), and thus they would not be considered a "strategic" stock under the MMPA. The average rate of incidental fishery mortality for this stock is likely to be greater than 10% of the calculated PBR; therefore, fishery mortality cannot be considered insignificant and approaching zero mortality and serious injury rate. The population appears to be stabilizing at what may be their carrying capacity and the fishery mortality is declining. There are no known habitat issues that are of particular concern for this stock. Two unexplained harbor seal mortality events occurred in Point Reyes National Park involving at least 90 seals in 1997 and 16 seals in 2000. Necropsy of three seals in 2000 showed severe pneumonia; tests for morbillivirus were negative, but attempts are being made to identify another virus isolated from one of the three (F. Gulland, pers. comm.). All west-coast harbor seals that have been tested for morbilliviruses were found to be seronegative, indicating that this disease is not endemic in the population and that this population is extremely susceptible to an epidemic of this disease (Ham-Lammé et al. 1999).

### ***Alaskan***

Harbor seals are not listed as "depleted" under the MMPA or listed as "threatened" or "endangered" under the Endangered Species Act. At present, annual U.S. commercial fishery-related mortality levels less than 326 animals per year (i.e., 10% of PBR) can be considered insignificant and approaching zero mortality and serious injury rate. A reliable estimate of the annual rate of mortality incidental to commercial fisheries is unavailable. Therefore, it is unknown whether the kill rate is insignificant. Based on the best scientific information available, the estimated annual level of total human-caused mortality ( $1,092 + 0.2 + 1 = 1,094$ ) is not known to exceed the PBR (3,260) for this stock. Therefore, the Southeast Alaska stock of harbor seals is not classified as a strategic stock. The status of this stock relative to its Optimum Sustainable Population size is unknown.

### **Hooded seals**

The status of hooded seals relative to the OSP in U.S. Atlantic EEZ is unknown, but the stock's abundance appears to be increasing. The species is not listed as threatened or endangered under the Endangered Species Act. The total U.S. fishery-related mortality and serious injury for this stock is very low relative to the stock's size, and can be considered insignificant and approaching zero mortality and serious injury rate. Because the level of human-caused mortality and serious injury is also low relative to overall stock size; therefore, this is not a strategic stock.

### **Harp seals**

The status of the harp seal stock, relative to the OSP, in the U.S. Atlantic EEZ is unknown, but the stock's abundance appears to have stabilized. The species is not listed as threatened or endangered under the Endangered Species Act.

The total U.S. fishery-related mortality and serious injury for this stock is very low relative to the stock size and can be considered insignificant and approaching zero mortality and serious injury rate. The level of human-caused mortality and serious injury in the U.S. Atlantic EEZ is also low relative to the total stock size; therefore, this is not a strategic stock.

***Grey seals***

The status of the grey seal population relative to the OSP in U.S. Atlantic EEZ waters is unknown, but the stock’s abundance appears to be increasing in Canadian and U.S. waters. The species is not listed as threatened or endangered under the Endangered Species Act. The total U.S. fishery-related mortality and serious injury for this stock in the U.S. Atlantic EEZ is low relative to the stock size in Canadian waters and can be considered insignificant and approaching zero mortality and serious injury rate. The level of human-caused mortality and serious injury in the U.S. Atlantic EEZ is unknown, but believed to be very low relative to the total stock size; therefore, this is not a strategic stock.

C. Description of the Proposed Activity

1. Dates and locations of proposed taking:

We request a permit for stranded, releasable California sea lions, harbor seals, hooded seals, harp seals and grey seals (up to 6 females and 2 males per species) to be taken from rehabilitation centers in the U.S. over the course of the permit. The animals will be permanently housed at MAIFE in Mystic Connecticut. Table 1 shows our current collection of pinnipeds and their location.

Table 1. Mystic Aquarium pinniped collection as of June 2007

<b>Species</b>	<b>On-site</b>	<b>Off-site</b>	<b>Offsite location</b>
Steller sea lion	1.3	2.0	Oregon Coast Aquarium
Calif. sea lion	3.0	0.0	
Northern fur seal	3.0	2.2	Moody Gardens and New England Aquarium
Harbor seal	1.0	2.0	Adventure Aquarium and Brookfield Zoo

We predict that without intervention our population of pinnipeds will decrease over the next ten years (Fig. 1). Our goal is to increase the number of phocids and California sea lions at Mystic and to maintain these species through managed breeding programs. Our past experiences in managed breeding programs with California sea lions, harbor and gray seals was quite successful until the programs were discontinued in the early 1990s due to space limitations. We will continue to maintain Steller sea lions through transport and import of animals approved under our Research Permit (# 42-1642-04). Our collection of northern fur seals will likely be managed as a “display / education /research only” species i.e., no breeding, as suggested by the AZA’s Marine Mammal Taxon Advisory Group. As defined further in section D7, we will carefully consider non-releasable animals that become available on a case by case basis.

## Pinnipeds at MAIFE

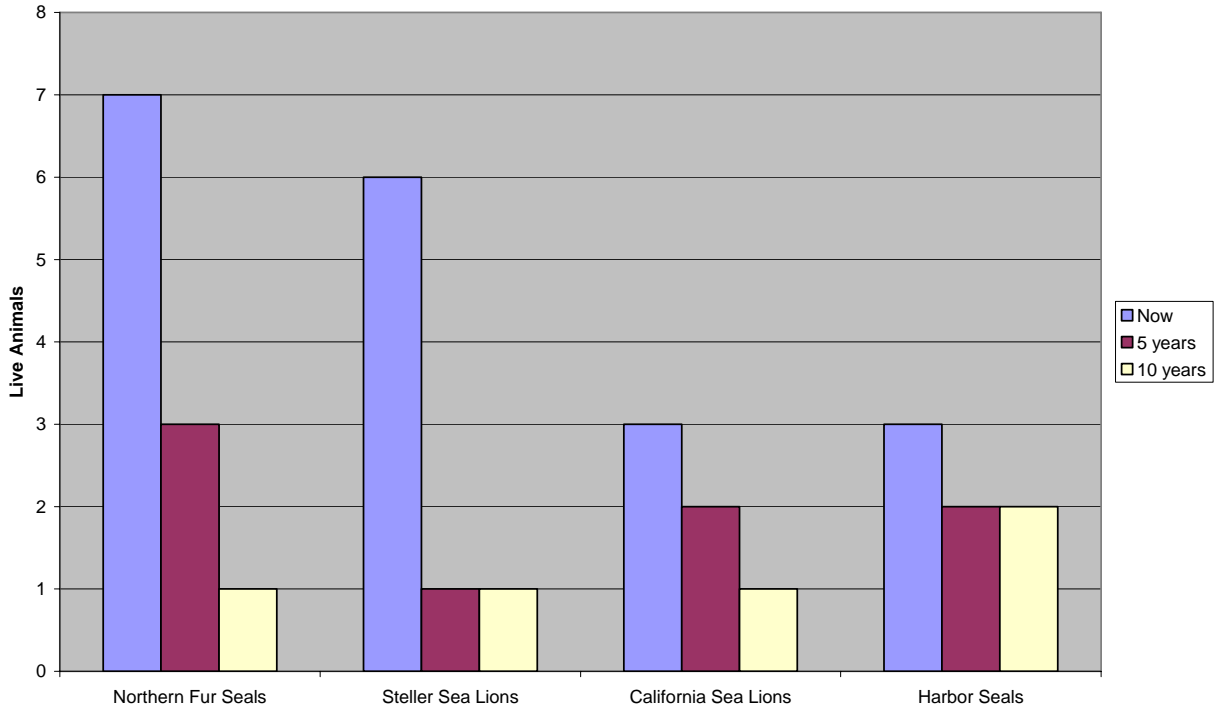


Figure 1. Prediction of the attrition of pinnipeds at MAIFE over a 10 year period.

We request permission to take up to 6 females and 2 males of each species over a 5-year period for a maximum of 8 otariids and 20 phocids. Table 2 ESTIMATES the number of takes by species and year. We request some flexibility to this as it is dependent on the compliment of animals in our collection at the time and other unpredictable issues that may arise.

Table 2. Estimate of the number of takes by species and year.

Year	Calif. sea lion	Harbor seal	Hooded seal	Grey seal	Harp seal
2008	1.2				
2009	0.2	1.1			
2010	1.2	0.2 and/or	0.2 and/or	0.2 and/or	0.2
2011		1.2 and/or	0.2 and/or	0.2 and/or	0.2
2012		0.1 and/or	1.2 and/or	1.2 and/or	1.2

2. Proposed duration of the permit  
Five years – see Table 2 above

3. Type of taking involved:

We propose to take pups or juveniles, up to 6 females and 2 males of each species as described in Table 2 above. In the case of California sea lions and harbor seals, we will first consider animals that strand in the earlier stages of maternal care as they may have the lowest chance of post-release survival due to their extended period of human care and possible imprinting on people. We will always consider non-releasable stranded animals first and they will be assessed as to suitability with our captive population on a case by case basis.

**D. If Marine Mammals are to be Collected from the Wild:**

*We propose to take stranded, releasable animals, not collect directly from the wild.*

Items 1-6: Since we propose to obtain animals from stranding centers, they will be acquiring the animals pursuant to their authority under Section 109(h) or 112(c) of the MMPA. The transport and handling of these animals falls under the discretion and jurisdiction of licensed stranding rehabilitation facilities, their existing protocols and veterinary assessment.

7. If a captive stock of the species concerned is available, the applicant must explain why the animals cannot be obtained from such captive stock:

Of the five species we are requesting only three are commonly displayed in U.S. facilities (CSL, harbor seal, grey seal). Hooded seals are not currently displayed in U.S. facilities and only two male harp seals are held in U.S. facilities; and thus not available from captive stocks.

With respect to California sea lions, there are currently 423 animals located at 66 institutions (198.223.2) according to the studbook which was updated in June 2007. Of these animals approximately 7% are less than 5 years old, 54% between 5 and 20 years old and 39% greater than 20 years old. Over the last 10 years there have been 119 births (66.51.2), 84 of which were at a single institution. It has not yet been confirmed genetically but it is likely that a single dominant male sired the majority of these pups. According to the studbook there are 24 intact founder males (8 < 6 years of age, 5 between age 7 and 20, 11 > 20 years old) and 29 female founders (7 < 6 years old, 6 between 7 and 20, 16 greater than 20 years old). Although we will be considering current captive animals as an option, the introduction of new, unrelated animals into the captive population will be beneficial to the genetics and demographics of the collection. California sea lions are currently being managed under a Population Management Plan (PMP) and as required by AZA, a master planning session for this species is scheduled for January 2008).

Cooperative agreements between institutions do exist. Mystic Aquarium currently has 2 harbor seals, 2 Steller sea lions and 4 northern fur seals at other facilities. Mystic has also held animals from other institutions (both short and long term) on breeding loans as well as for exhibit renovations. However, not all facilities are willing to loan or donate animals at no cost. The cost for multiple animals is prohibitive to our financial resources as a non-profit institution focused on research and education.

For these reasons we are seeking acquisition of releasable or non-releasable stranded pinnipeds. Mystic Aquarium is a founding member of the Northeast Regional Stranding Network. We work closely with others in the region as well as stranding facilities nationwide. With approval of this permit

application we will contact our colleagues through the regional stranding coordinators and ask for their help in identifying potential releasable and/or non-releasable animals. As animals (both non-releasable and releasable) become available they will go through the criteria outlined in section D9. If non-releasable animals meet all of the selection criteria (which are in place to maximize the success of introduction and long term care in our collection) they would always be taken above a releasable animal.

9. If an animal may be determined to be unsuitable for public display, give details regarding the plan for return to the wild:

Prior to Mystic Aquarium adding any animal into our collection (releasable or non-releasable) there is a process in place to assess each individual to maximize the success of obtaining animals that are socially compatible with our collection. Our belief is that by following this plan we will minimize the need for an animal to be returned to the wild. In the unlikely event that an individual is determined to be unsuitable for our program, we will work directly with NMFS to determine the appropriate disposition for the animal and would employ our proven strategies for the release of stranded animals held for longer than normal rehabilitation .

Additionally we must assess the animal's attitude and general disposition as the ideal animal would be one that is not overly aggressive, is bright, responsive to behavioral training, and has a low stress level. Once a potential animal is identified the process for selection is as follows:

1. Talk to the stranding coordinator and veterinarian at the facility where the animal is being rehabilitated and obtain initial information.
2. Request photos, video and medical records for review,
3. Review records and discuss amongst animal management committee. This includes an extensive evaluation of overall health status (including morbilli virus titers and other diseases), any special needs (medical or behavioral), aggressive tendency towards other animals and people, and the potential for behavioral management,
4. If an animal is a viable option for inclusion in Mystic's collection then, a Mystic staff member will be sent to the rehabilitation facility to further evaluate the animal and address any concerns.  
If final evaluation meets all of the criteria and the animal is deemed suitable for public display at Mystic Aquarium a commitment will be made to retain the animal and at this point there would be no need to return the animal to the wild.
5. Plan and execute transport.
6. Upon arrival animal will be placed in a quarantine area for a minimum of 30 days. Final health analyses and screening will be performed and initial behavioral conditioning will commence.
7. At the end of the quarantine period the animal will be introduced to the collection and behavioral conditioning will continue as with all of our collection animals.

E. If Marine Mammals are to be imported into the U.S.

We are not asking to import marine mammals in the permit application.

F. Effects of the proposed activity, including:

a) **the individuals concerned:** These animals will remain in a curated collection for the duration of their lives. The care they receive may result in increased life span through lack of predation, treatment of disease, as well as provision of healthy and adequate foods.

b) **The relevant species or stock:** N/A - No animals will be taken from the wild. None of the requested species are endangered, so returning stranded animals to the wild poses no advantage to the wild population. The likelihood of these animals surviving their strandings without human intervention is low and there is no guarantee these animals would be able to survive post rehabilitation and release back to the wild.

c) **The human environment:** The addition of these animals into captivity will enhance the human environment by providing educational and opportunistic research opportunities. Educating the public on conservation measures for all marine mammal species is an important goal of Mystic Aquarium. Introduction of stranded animals into our collection offers the perfect opportunity to disseminate this information.

d) **The marine ecosystem:** The taking of these animals will have no effect on the marine ecosystem. These animals are removed from the environment due to stranding and would likely not survive the stranding event without human intervention.

V. Export Requirements

N/A: We are not requesting permission to export any animals.

VI. General Requirements for Public Display

A. Name and address of the facility, hours of operation and cost of admission:

Mystic Aquarium & Institute for Exploration  
55 Coogan Blvd.  
Mystic, CT 06355

Hours of Operation:	Summer	9:00 AM – 6:00 PM	
	Off season	10:00 AM – 5:00 PM	
Cost of Admission:	Summer	Adult \$20.75	Child \$15.25
	Off season	Adult \$18.50	Child \$13.50

B. APHIS License number

APHIS Class C Exhibitor license # 16-C-0025 and APHIS Class R Research license # 16-R-0031. Copies attached. (copies received 8/9/07-jls)

C. Specify the professionally recognized standards of the public display community upon which the education or conservation program is based, and provide a general description of the program offered for reference purposes.

MAIFE is an accredited member of the American Association of Zoos and Aquariums and the Alliance of Marine Mammal Parks and Aquariums and abides by the Standards for education and conservation programs developed and endorsed by these organizations.

Mystic Aquarium and Institute for Exploration (MAIFE) has remained one of the nation's most respected aquariums since its inception 30 years ago. The mission of MAIFE is "to inspire people everywhere to care about and protect our oceans



by exploring and sharing their biological, ecological and cultural treasures”. ***Education and Research*** make up the core of this mission.

Education and outreach is of paramount importance at MAIFE. Each year, 750,000 people visit our facility and through a combination of direct education, signage, posters and videos gain access to the marine environment and conservation efforts. In addition to educating visitors and the general public, educators conduct more formal classroom programs which reach more than 20,000 students each year (elementary school through college) through both in-house (>430 classes/year) and traveling (>690 classes/year) educational programs. Through Sea Research Foundation (the Aquarium’s Parent Organization) our Immersion Presents after school program collaborates with the Boys & Girls Clubs of America nationally through both live broadcasts and self-directed educational activities. Future Immersion Presents activities will incorporate a more direct link to the marine mammal research and animal care at Mystic Aquarium. Additionally Mystic Aquarium also provides numerous opportunities for scientists, volunteers, college interns, and veterinary students interested in marine science to gain hands-on research and animal care experience on a regular basis.

Mystic Aquarium has made significant strides in marine mammal research utilizing whales, seals, and sea lions in the collection as well as investigations of wild marine mammal populations. The Aquarium’s research department is dedicated to conducting high quality research designed to broaden our understanding of the health challenges impacting aquatic species worldwide. In 2004, substantial funds were dedicated to building an on-site, state-of-the-art research laboratory with capabilities such as flow cytometry, PCR, tissue culture and high performance liquid chromatography. The laboratory facilitates an integrative research program in aquatic animal health that includes studies in neuroimmunology, animal nutrition, veterinary science and infectious disease. The research and husbandry departments maintain a close relationship and work towards training appropriate behaviors to facilitate research while minimizing the effect on the animals.

There are currently 3 outdoor pools routinely used for housing collection pinnipeds at Mystic Aquarium. Pool 1 (53.5’ x 36’, 4’ to 6.2’ deep, 56,100 gallons) is an off exhibit pool. Pool 2 (70’ x 32’, 6.5’ to 8.5’ deep, 119,200 gallons) currently houses 3 adult female SSL with multiple male northern fur seals and a harbor seal. The intention for this pool is a mixed species exhibit containing female Steller sea lions, one male and multiple female California sea lions (for breeding) and potentially male northern fur seals. The female Steller sea lions are trained to receive behavioral injections and thus adequate birth control measures will be taken to avoid any possible cross breeding between California and Steller sea lions. Pool 3 (70’ x 50’, 6.5’ to 8.5’ deep, 130,000 gallons) currently houses one adult male Steller sea lion who will be maintained alone until we can obtain a suitable companion for him. In the backup area is a small holding pool (10’ x 9.3’, 3.5’ to 4’ deep, 2600 gallons) in which larger animals can be held for short periods of time (up to a few hours) for exhibit maintenance or cleaning. This pool has also been used in the past for weaning

pups or isolating small phocids or female California sea lions during illness. Additionally the Aquarium has two 40' round pools (10 feet deep) located in a separate area in which will be utilized for the initial 30 day quarantine of stranded animals and which can also be utilized as needed for separation of animals. Our future plans also includes adding a partition to our Arctic Coast Exhibit (which currently houses 3 beluga whales). With this partition we would have the ability to contain phocids in one area of the exhibit and/or open the partition for free swimming with the belugas throughout the exhibit as has been done in the past. We are currently seeking funding sources for the design and implementation of this modification.

VII. Previous Permits

1. Previous Permits

NMFS Research Permit No. 42-1642-04, issued October 15, 2000, expiration date October 15, 2007.

2. Cooperating Institutions

N/A

3. Other Permits

No other permits are being sought in association with this request.

VIII. Certification and Signature

“I hereby certify that the foregoing information is complete, true, and correct to the best of my knowledge and belief. I understand that this information is submitted for the purpose of obtaining a permit under one or more of the following statutes and the regulations promulgated thereunder, as indicated in Section I of this application:

The Marine Mammal Protection Act of 1972 (16 U.S.C. 1361 et seq.) and regulations (50 CFR part 216).

I also understand that any false statement may subject me to the criminal penalties of 18 U.S.C. 1001, or to penalties provided under the Marine Mammal Protection Act of 1972, or the Fur Seal Act of 1966, whichever are applicable.”

Signature page received 8/9/07- jls

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Lisa Mazzaro, Ph.D.  
Assistant Director of Research and Animal Care  
Mystic Aquarium & Institute for Exploration

Date