UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
PROGRAM PLANNING AND INTEGRATION
Silver Spring, Maryland 20910

JUL 28 2011

To All Interested Government Agencies and Public Groups:

Under the National Environmental Policy Act (NEPA), an environmental review has been performed on the following action.

TITLE: Environmental Assessment For Issuance of a Scientific Research Permit for Cetacean Studies

LOCATION: Pacific Ocean

SUMMARY: NMFS proposes to issue scientific research Permit No. 15330 to authorize research during vessel and aerial surveys of 40 species of cetacean and seven species of pinnipeds. Research activities would include photo-identification, acoustic recording, biological sample collection, and dart and suction cup tagging. The purpose of research is to determine the abundance, distribution, stock structure of cetaceans, movement patterns, habitat use, and diving behavior of cetaceans in U.S. territorial and international waters. Individual animals could experience short-lived harassment or injury in a minor number of cases. However, impacts from the research would be minimal to populations and species.

RESPONSIBLE OFFICIAL:

James H. Lecky
Director, Office of Protected Resources
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
1315 East-West Highway, Room 13821
Silver Spring, MD 20910
(301) 713-2332

The environmental review process led us to conclude that this action will not have a significant effect on the human environment. Therefore, an environmental impact statement will not be prepared. A copy of the finding of no significant impact (FONSI) including the supporting environmental assessment (EA) is enclosed for your information.

Although NOAA is not soliciting comments on this completed EA/FONSI we will consider any comments submitted that would assist us in preparing future NEPA documents. Please submit any written comments to the responsible official named above.

Sincerely,

for Paul N. Doremus, Ph.D.
NOAA NEPA Coordinator

Enclosure

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

Environmental Assessment
FOR
Issuance of a Scientific Research Permit for Cetacean Studies

June 2011

Lead Agency: USDC National Oceanic and Atmospheric Administration National Marine Fisheries Service, Office of Protected Resources

Responsible Official: James H. Lecky, Director, Office of Protected Resources

For Further Information Contact: Office of Protected Resources
National Marine Fisheries Service
1315 East West Highway
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Location: Pacific Ocean

Abstract: The National Marine Fisheries Service (NMFS) proposes to issue a scientific research permit for takes of marine mammals in the wild, pursuant to the Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. 1361 et seq.) and the Endangered Species Act of 1973 (ESA; 16 U.S.C. 1531 et seq.). The permit would be valid for five years from the date of issuance and would authorize research on seven species of pinnipeds, 40 species of cetaceans, and unidentified mesoplodon species. The purpose of research is to determine the abundance, distribution, stock structure of cetaceans, movement patterns, habitat use, and diving behavior of cetaceans in U.S. territorial and international waters. The project would be conducted through vessel surveys, aerial surveys, photo-identification, acoustic recording, biological sample collection, and dart and suction cup tagging. Salvage and import/export of cetacean parts, specimens, and biological samples would also occur.

Contents

1.0 PURPOSE OF AND NEED FOR ACTION

Proposed Action
In response to receipt of a request from Robin Baird, Ph.D., Cascadia Research Collective, Olympia, Washington, (File No. 15330), NMFS proposes to issue Scientific Research Permit No. 15330, pursuant to the Marine Mammal Protection Act of 1972, as amended (MMPA; 16 U.S.C. 1361 *et seq*.), the Endangered Species Act of 1973 (ESA; 16 U.S.C. 1531 *et seq*.), and the Fur Seal Act of 1966 (16 U.S.C. 1151 *et seq*.). for "takes"[1] of marine mammals, including those listed as threatened or endangered.

Purpose of and Need for Action: The MMPA and ESA prohibit "takes" of marine mammals and of threatened and endangered species, respectively, with only a few specific exceptions. The applicable exceptions in this case are an exemption for *bona fide* scientific research under Section 104 of the MMPA and for scientific purposes related to species recovery under Section 10(a)(1)(A) of the ESA.

The purpose of the permit is to provide the applicant with an exemption from the take prohibitions under the MMPA and ESA for harassment (including level A and B harassment as defined under the MMPA[2]) of marine mammals, including those listed as threatened or endangered, during conduct of research that is consistent with the MMPA and ESA issuance criteria.

The need for issuance of the permit is related to the purposes and policies of the MMPA and ESA. NMFS has a responsibility to implement both the MMPA and the ESA to protect, conserve, and recover marine mammals and threatened and endangered species under its jurisdiction. Facilitating research about species' basic biology and ecology or that identifies, evaluates, or resolves specific conservation problems informs NMFS management of protected species.

Scope of Environmental Assessment: This EA focuses on effects of the proposed research on 10 species listed as threatened and endangered under the ESA, and one stock proposed for ESA listing, Hawaiian insular false killer whales (*Pseudorca crassidens*), as well as marine mammals protected under the MMPA.

The National Oceanic and Atmospheric Administration (NOAA) has, in NOAA Administrative Order 216-6 (NAO 216-6; 1999), listed issuance of permits for research on marine mammals and threatened and endangered species as categories of actions that "do not individually or cumulatively have a significant effect on the human environment…" and which therefore do not require preparation of an environmental assessment (EA) or environmental impact statement

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1 Under the MMPA, "take" is defined as to "harass, hunt, capture, kill or collect, or attempt to harass, hunt, capture, kill or collect." The ESA defines "take" as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."
2 "Harass" is defined under the MMPA as "Any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild (Level A harassment); or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing a disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but does not have the potential to injure a marine mammal or marine mammal stock in the wild (Level B harassment)."

(EIS). A possible exception to the use of these categorical exclusions is when the action may adversely affect species listed as threatened or endangered under the ESA (NAO 216-6 Section 5.05c).

There is no evidence from prior analyses[3] of the effects of permit issuance, or from monitoring reports submitted by permit holders[4], that issuance of research permits for take of marine mammals listed under the ESA results in adverse effects on stocks or species. Nevertheless, NMFS has prepared this EA, with a more detailed analysis of the potential for adverse impacts on threatened or endangered species resulting from takes of a specified number of individual whales or pinnipeds, to assist in making the decision about permit issuance under the MMPA and ESA.

2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

Alternative 1- No Action

Under the No Action alternative, Permit No. 15330 would not be issued. This alternative would eliminate any potential risk to the environment from the proposed research activities, and the applicant would not receive an exemption from the MMPA and ESA prohibitions against take.

Alternative 2 – Proposed Permit:

Under the Proposed Action alternative, a five-year research permit would be issued for takes of marine mammals during activities proposed by the applicant. The permit would include terms and conditions standard to such permits as issued by NMFS (see Appendix A).

The research activities as proposed by the applicant would include aerial surveys and close vessel approach for behavioral observations, underwater observation, photographic identification, breath, skin and fecal sample collection, acoustic recording, and to attach tags by suction cup or by implanting darts or electrodes into the skin and blubber. No research-related mortalities would be authorized. Proposed species and take numbers are listed in the table found in Appendix C.

The following is a summary of the applicant's request to take marine mammals, including those listed as threatened or endangered under the ESA.

<u>Methods:</u>

The research protocols are described in detail in the application on file for this action and are briefly summarized here. Proposed research would take place throughout the year, with the majority of effort likely to be around the Hawaiian Islands. Additional effort would occur along

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3 Since 2005, NMFS has prepared over 100 EAs for issuance of permits under the MMPA and ESA. In every case, the EA supported a finding of no significant impact regardless of the nature of the permitted take or the status of the species that were the subject of the permit or batched permits. These EAs were accompanied by Biological Opinions prepared pursuant to interagency consultation under section 7 of the ESA and further document that such permits are not likely to adversely affect listed species. A listing of recently completed EAs is provided in Appendix A.

4 All NMFS permits for research on marine mammals require submission of annual reports, which include information on responses of animals to the permitted takes.

the west coast of North America, and possibly in other U.S. territories (e.g., Palmyra, Wake, Johnston, Guam, and American Samoa) as well as international waters of the Pacific Ocean. Though all species for which takes are requested would be approached, the primary species of interest are false killer whales, beaked whales, pygmy killer whale, dwarf sperm whales and killer whales.

Level B harassment of cetaceans would occur primarily from vessels less than 11 m in length and occasionally vessels up to 40 m in length, during all activities. Whales would be approached to a minimum of 2 m for small cetaceans and 15 m for large whales, for photo-identification, breath sampling, collection of sloughed skin and prey samples, sub-surface observation by snorkelers, and attachment of tags. Approach durations would vary depending on circumstances, behaviors, social dynamics, and weather and water conditions, and would range from one minute to 12 hours. Tagged whales would be photographed on subsequent surveys to assess the animals' condition, monitor for wound healing, and determine if the tag is still attached.

Disturbance to animals would be minimized during close vessel approaches for all activities by:

- Approaching at minimal speeds from behind or beside the group.
- Limiting approaches to the minimum time necessary to achieve objectives.
- Terminating activities if repeated avoidance occurs.
- Using caution when approaching females with calves.
- Snorkelers would remain 10 meters away for usually no more than 10 minutes though animals may make intentional curious approaches.

Additional level B harassment would occur from aerial surveys. Aerial surveys would occur at 500-800ft in fixed wing aircraft or helicopters for a duration of up to 2 hours per flight. Circling over an animal's location may occur and last up to 30 minutes.

Level A harassment would occur during suction cup, electrocardiogram (ECG) electrode, and dart tagging activities of adults and sub-adults, including adult females accompanied by calves older than 6 months. Calves would not be tagged. Level B harassment from vessel-based activities, as described above, would occur concurrently.

In addition to the mitigation measures described above for close approach, mitigation measures used during tagging would include:

- Using clean sterile attachments and handling procedures.
- Using the smallest, lightest tag package available.
- When possible, identifying individuals prior to sampling to avoid duplication.
- Tagging attempts would be limited to 2 per individual per encounter and 4 attempts per year. No tagging attempts would be made on calves estimated to be less than one year old or on females with calves estimated to be less than 6 months of age. An individual would not be intentionally tagged more than once a year.

Advancements in technology have consistently led to smaller and more effective tags, and this trend is expected to continue in the future. Exact dimensions and weights would vary with the

generation of tag and the specific components included. Tagging equipment would be updated as newer models become available.

All tag types would be attached using a hand-held or cantilevered pole or deployed with a crossbow or airgun at distances of 2-30 m. Behavioral responses of tagged individuals and of other animals in the group would be observed and recorded.

Implantable Dart Tag

Low Impact Minimally Percutaneous External-electronics Transmitter (LIMPET) tags with a dart attachment system would be used for satellite tagging effort. The tags provide location and depth information. These tags weight up to 59 grams and are up to approximately 6.3cm x 3cm x 2.2cm with a 17 cm long antennae. The dart portion is made from medical grade titanium and the lengths range up to 7cm with shorter lengths used to tag smaller species. The lower dorsal fin area or dorsal ridge is the target location for attachment. Tags are expected to stay attached for up to 25 weeks and are designed to release after one year.

Physiological Tag (ECG electrode)

The ECG tags (Figures 1 and 2) are used to for recording physiological variable to study diving physiology. The measure both heart rate and body temperature. This tag package consists of two suction/electrode attachments connected by long thin wire (40cm) with an attached data logger. The electrodes are 4mm wide, made of steel or titanium, and penetrate up to 6.5 cm for larger species and 3 cm for small species. These tags are attached to the side of the animal. The tag weighs up to 400 grams and can remain attached up to 2 days, detaching as the result of hydrodynamic drag.

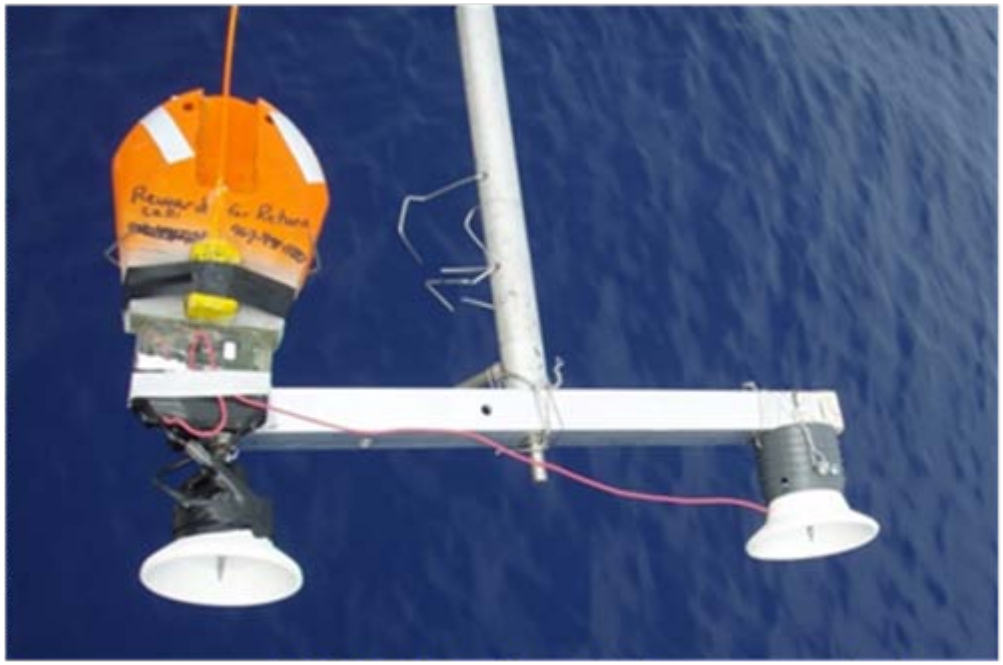

Figure 1. Modified cetacean ECG tag, with tag datalogger body tethered to the primary suction cup/dart electrode, attached to the deployment pole.

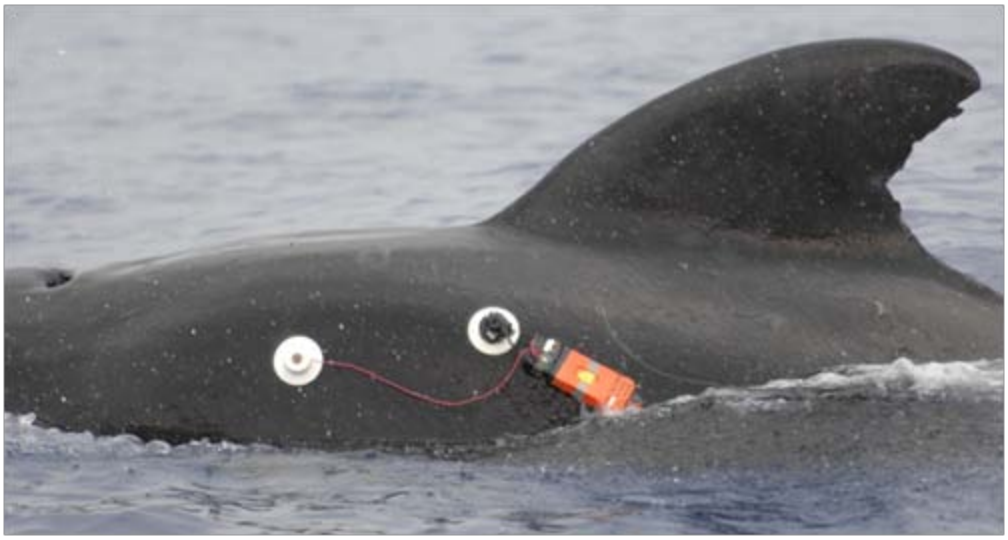

Figure 2. ECG tag attached to pilot whale off the Kona coast of Hawai'i.

Suction Cup Tag

Suction cup tags would be used to measure temperature, light level, sound, and position, and may have a VHF transmitter or video/still recorder. The tag packages combine one to six suction cups attached to a syntactic foam housing with sensors etc., making them slightly buoyant in water. Tags would be attached to the dorsal surface near the dorsal fin or ridge area of an animal. These tags range in size up to 1 kg. Tags would remain attached until the suction cup loses purchase or is dislodged by the action of the tagged animal, which occurs within a few days.

Biological samples collected (fecal material, sloughed skin etc.) would be archived at the NMFS Southwest or Northwest Fisheries Science Centers. All exposed sampling media would be handled with surgical gloves and sterile implements, and shipped according to the Department of Transport Category B regulations for diagnostic specimens.

Permit Duration:

The proposed permit would be valid for five years from the date of issuance, which is the maximum duration of an MMPA permit. A single one-year extension of the permit may be authorized and would be considered a modification, pursuant to NMFS regulations at 50 CFR §222.306.

If granted, a one-year extension of the permit would only allow "takes" of marine mammals that were not used in the last year of the permit; these remaining takes would be carried forward into a sixth permit year. The extension would not change any other terms or conditions of the permit. NMFS does not consider a one-year extension of this nature to represent a substantial change to the proposed action that involves changes in environmental impacts. As such, NMFS would not prepare a supplemental EA for the one-year extension unless significant new information or circumstances relating to environmental impacts is available (e.g., a change in the status of the target species, listing of new threatened or endangered species in the project area).

Target Species or stocks:

The applicant's research is directed at 40 species of cetaceans (including their individually managed stocks) (Table 1, target species). The requested actions involve Level A and B harassment that may indirectly affect seven pinniped species (Table 1, non-target species). The permit would exempt takes of all these marine mammals potentially disturbed. This is consistent with the MMPA definition of harassment in which actions with a potential to injure a marine mammal or disturb a marine mammal in the wild by causing disruption of behavioral patterns including migration, breathing, nursing, breeding, feeding, or sheltering are considered a take. The inclusion of "potential to" in this definition means that the take occurs regardless of whether there is an injury or a disruption in the behavioral patterns of marine mammals exposed to the action.

Table 1: Target and Non-Target Species

Target Species: Non- ESA Listed	
Dolphin, bottlenose	Whale, Cuvier's beaked
Dolphin, common, long-beaked	Whale, dwarf sperm
Dolphin, common, short-beaked	Whale, ginkgo-toothed beaked
Dolphin, Fraser's	Whale, gray
Dolphin, Indian Ocean bottlenose	Whale, Hubbs' beaked
Dolphin, northern right whale	Whale, killer (Excluding SRKW)
Dolphin, Pacific white-sided	Whale, Longman's beaked
Dolphin, pantropical spotted	Whale, melon-headed
Dolphin, Risso's	Whale, minke
Dolphin, rough-toothed	Whale, Perrin's beaked
Dolphin, spinner	Whale, pilot, short-finned
Dolphin, striped	Whale, pygmy beaked
Porpoise, Dall's	Whale, pygmy killer
Porpoise, harbor	Whale, pygmy sperm
Whale, Baird's beaked	Whale, Stejneger's beaked
Whale, beluga (Excluding Cook Inlet Stock)	Whale, unidentified baleen
Whale, Blainville's beaked	Whale, unidentified beaked
Whale, Bryde's	Whale, unidentified mesoplodon
Whale, False killer (Excluding Hawaiian insular stock)	
Target Species: ESA Listed or Proposed for Listing (*)	
Whale, blue	Whale, killer (Southern resident DPS)
Whale, false killer (Hawaiian insular)*	Whale, right, North Pacific
Whale, fin	Whale, sei
Whale, humpback	Whale, sperm
Non- Target Species:	
Non-ESA	**ESA**
Sea lion, California	Sea lion, Steller (Eastern and Western DPS's)
Seal, harbor	Seal, Guadalupe fur
Seal, northern elephant	Seal, Hawaiian monk
Seal, northern fur	

3.0 AFFECTED ENVIRONMENT

Location
Research would occur in (sub-surface observation), on (vessel based surveys) or over (aerial based surveys) the waters of the North Pacific ocean including U.S. EEZ and state waters off of Alaska, Washington, Oregon, California, Hawaii, U.S. territories; and international waters. The primary research would occur in the state and EEZ waters off of Hawaii.

Status of Species
There are 40 species of cetaceans found in the study area that would be targeted for research (Table 1). Of these 40, six are listed as endangered, one (killer whales) has Distinct Population Segments (DPS's) that is listed as endangered, and one (false killer whale) has a DPS proposed for ESA listing. Gray whales have one listed DPS in the western Pacific; however, their range falls outside the action area and are not included.

There are six species of pinnipeds, including three that are ESA listed; that are non-target species that may be subject to Level B harassment (Table 1).

ESA-Listed Species

Sei whale *(Balaenoptera borealis):* Sei whales are widely distributed in all oceans, although this species is not found as far into polar waters as other rorquals (Gambell, 1985). Maximum reported body length is about 18 m. As is true of other baleen whale species, female sei whales are somewhat larger than males. Sei whales have a long, slender body with a broad, flat rostrum; a distinctive and prominent dorsal fin that rises steeply then slopes back; and a more uniform dark gray to brown color pattern. Sei whales lack the ancillary head ridges seen on Brydes whale.

Several stocks of sei whales have been identified, but updated estimates of the number of sei whales worldwide are not available. Commercial whaling reduced sei whale numbers in the North Pacific from 42,000 whales to approximately 7,000 to 12,000 animals by 1974 (Tillman, 1977). For management purposes, sei whales within the Pacific U.S. EEZ are divided into two discrete, non-contiguous areas: 1) waters around Hawaii, and 2) California, Oregon and Washington waters.

Eastern North Pacific stock: The IWC recognizes only one stock of sei whales in the North Pacific, but some evidence exists for multiple populations (Horwood, 1987; Masaki, 1977; Mizroch et al., 1984). Lacking additional information on sei whale population structure, sei whales in the eastern North Pacific (east of longitude 180°) are considered a separate stock for management purposes under the MMPA. The best abundance estimate for whales off the coasts of California, Oregon and Washington is 126 animals with an annual Potential Biological Removal (PBR) level of 0.17 (Caretta et al., 2010). No population trend is available for this stock. The offshore drift gillnet fishery may threaten this stock but no mortalities or serious injuries have been reported. No vessel collisions have been reported since 2003.

Hawaii stock: Little information is known about animals in Hawaii waters. The best abundance estimate for whales off Hawaii is 77 animals with an annual PBR level of 0.1 (Caretta et al., 2010). No population trend is available for this stock. There have been no reported fishery related mortality or serious injuries of sei whales in the Hawaiian Islands EEZ and is not considered to be a significant concern. The increasing levels of anthropogenic noise in the marine environment is a concern and may have habitat associated impacts.

Blue whale *(Balaenoptera musculus):* The blue whale is a cosmopolitan species of baleen whale. Maximum reported body length is about 27 m. As is true of other baleen whale species, female blue whales are somewhat larger than males. Blue whales have a long body and comparatively slender shape; a broad, flat rostrum; a proportionately smaller dorsal fin than other baleen whales; and a mottled gray color pattern that appears light blue when seen through the water.

The primary and preferred diet of blue whales is krill. Although other prey species, including fish and copepods, have been mentioned in the scientific literature, they likely do not contribute significantly to the diet of blue whales.

Scientists have yet to discern many details regarding the life history of the blue whale. The best available science suggests that the gestation period is approximately 10 to 12 months and that blue whale calves are nursed for about 6 to 7 months (NMFS, 1998). Most reproductive activity, including mating and birthing, takes place during the winter. Weaning probably occurs on, or en route to, summer feeding areas. The average calving interval is probably 2 to 3 years. The age at sexual maturity is thought to be 5 to 15 years (Mizroch, et al., 1984) (Yochem and Leatherwood., 1985).

Blue whales inhabit sub-polar to sub-tropical latitudes. Poleward movements in spring allow the whales to take advantage of high zooplankton production in summer. Movement toward the subtropics in the fall allows blue whales to use less energy while fasting, avoid ice entrapment in some areas, and engage in reproductive activities in warmer waters of lower latitudes. Although the species is often found in coastal waters, generally blue whales are thought to occur more offshore than humpback whales.

Blue whales are found in oceans worldwide and are separated into populations by ocean basin, including two stocks in the Pacific ocean. They follow a seasonal migration pattern between summering and wintering areas, but some evidence suggests that individuals remain in certain areas year-round. Although the extent of knowledge concerning distribution and movement varies by area and migratory routes are not well known, in general, distribution is driven largely by food requirements.

North Pacific stocks: The blue whale's range encompasses much of the North Pacific Ocean, from Kamchatka to southern Japan in the west, and from the Gulf of Alaska and California south, to at least Costa Rica in the east. The species is found primarily south of the Aleutian Islands and the Bering Sea. Whaling and sighting data suggest the existence of at least five subpopulations of blue whales, with an unknown degree of mixing among them.

For management purposes under the MMPA, blue whales inhabiting U.S. waters in the North Pacific are divided into two stocks: Western and Eastern. Based on acoustic and whaling data, it is believed that the Eastern stock winters in waters off Mexico to Costa Rica, and feeds during summer off the U.S. West Coast and to a lesser extent in the Gulf of Alaska and in central North Pacific waters. Blue whales accompanied by young calves have been observed often in the Gulf of California from December through March, indicating that at least some calves may be born in or near the Gulf (Sears, 1990). Therefore, this area is probably an important calving and nursing area for the species. The Western stock appears to feed in summer southwest of Kamchatka, south of the Aleutians, and in the Gulf of Alaska (Stafford, 2003; Watkins et al., 2000); in winter they migrate to lower latitudes in the western Pacific and less frequently in the central Pacific, including Hawaii (Staffordet et al., 2001). Insufficient data are available to evaluate the current abundance or population trends of blue whale stocks in the western North Pacific.

The best estimate of blue whale abundance in the eastern North Pacific is 2,842 animals with an annual PBR of six whales per year in U.S. waters. Along the California coast blue whale abundance has been increasing during the past 2 decades (Barlow, 1994; Calambokidis and Barlow, 2004; Calambokidis et al., 1990). Because this apparent increase is too large to be accounted for by population growth alone, it is assumed that a shift in distribution has occurred and is discussed further below. Although the population in the North Pacific is expected to have grown since protection began in 1966, the possibility of continued unauthorized takes, incidental ship strikes and mortality, and serious injury in fishing gear makes this trend uncertain.

Blue whales were significantly depleted by commercial whaling activities worldwide. The reported take of North Pacific blue whales by commercial whalers totaled 9,500 between 1910 and 1965 (Ohsumi and Wada, 1972). Approximately 3,000 of these were taken from the west coast of North America from Baja California, Mexico to British Columbia, Canada (Clapham et al., 1997) (Rice, 1974; Tonnessen and Johnsen, 1982). The primary threats currently facing blue whales are vessel strikes and fisheries interactions but also include anthropogenic noise, natural mortality, vessel disturbance, habitat degradation, and competition for prey resources. There were five deaths and eight injuries reported between 2004-2008 resulting from ship strikes. NOAA has implemented a mitigation plan in response to this growing threat.

Changes in distribution

Evidence suggests the distribution and migratory patterns of blue whales may have changed in eastern Aleutian Islands and northern California.

South of the eastern Aleutian Islands, relatively large concentrations of blue whales were documented in the 1970s but the species appears rare there today, suggesting that illegal and unreported whaling depleted the population (Stewart et al., 1987) (Forney and Brownell Jr., 1996).

Off northern California (e.g., Farallon Islands, Moss Landing, and Trinidad), the recent appearance of numerous blue whales is noteworthy in light of their rarity in these regions prior to the late 1970s. Calambokidis (1995) concluded that such changes in distribution reflect a shift in feeding from the more offshore euphausiid, *Euphausia pacifica*, to the primarily neritic euphausiid, *Thysanoëssa spinifera*. More recently, some Californian animals have been

observed returning to waters of southern Alaska and British Columbia to feed (Calambokidis et al., 2009).

Fin whale *(Balaenoptera physalus):* Fin whales are the second-largest species of whale, with animals in the Northern hemisphere having a maximum length of about 22 m. Fin whales show mild sexual dimorphism, with females measuring longer than males by 5 to 10 percent. Adults can weigh 40 to 80 tons. Fin whales have a sleek, streamlined body with a V-shaped head. They have a prominent, falcate dorsal fin, located about two-thirds of the way back on the body, that rises at a shallow angle from the animal's back. The species has a distinctive coloration pattern: the back and sides of the body are black or dark brownish-gray with v-shaped gray chevrons angled forward. The coloration grades to white on the ventral surface, and the head coloration is asymmetrical, with the left lower jaw gray to black and the right lower jaw white.

During the summer, fin whales feed on krill, small schooling fish (e.g., herring, capelin, and sand lance), and squid by lunging into schools of prey with their mouth open, using their throat pleats to gulp large amounts of food and water, filtering out food particles using baleen plates on each side of the mouth. Fin whales fast in the winter while they migrate to warmer waters.

Little is known about the social and mating systems of fin whales. Similar to other baleen whales, long-term bonds between individuals are rare. Males become sexually mature at 6 to 10 years old, females at 7 to 12 years old. Physical maturity is attained at approximately 25 years for both sexes. After 11 to 12 months of gestation, females give birth to a single calf in tropical and subtropical areas during midwinter. Newborn calves are approximately 6 m long and weigh 2 tons. Fin whales can live 80 to 90 years.

Fin whales occur in all major oceans worldwide, primarily in temperate to polar latitudes, and less commonly in the tropics. They occur year-round in a wide range of latitudes and longitudes, but the density of individuals in any one area changes seasonally.

Fin whales seasonally migrate between temperate and polar waters (Perry et al., 1999). In the North Pacific, the International Whaling Commission (IWC) recognizes two stocks of fin whales, the east China Sea stock and the rest of the North Pacific (Donovan, 1991). For management purposes under the MMPA, three stocks of fin whales are recognized in Pacific U.S. waters: the California/Oregon/Washington stock, the Northeast Pacific (Alaska) stock, and the Hawaii stock.

California/Oregon/Washington stock: This stock is found along the U.S. west coast from California to Washington in waters out to 300 nmi. Because fin whale abundance appears lower in winter/spring in California (Dohl et al., 1983; Forney et al., 1995) and in Oregon (Green et al., 1992), it is likely that the distribution of this stock extends seasonally outside these coastal waters. The best available estimate of the stock's population size is 3,044 whales with a PBR of 16 whales (Carretta et al., 2010). Some data indicate that fin whales have increased in abundance in California coastal waters (Barlow, 1994, 1997), but these trends are not significant. Ship strikes average one serious injury or mortality each year. Fishery interactions may be approaching zero mortality and serious injury rate.

Northeast Pacific (Alaska) stock: Whales in this stock are found from Canadian waters north to the Chukchi Sea. Reliable estimates of current and historical abundance of fin whales in the entire northeast Pacific are currently not available. Based on surveys which covered only a small portion of the range of this stock, a rough minimum estimate of the size of the population west of the Kenai Peninsula is 5,700 with a PBR level of 11.4 whales (Angliss and Allen, 2009). Data suggests that this stock may be increasing at an annual rate of 4.8 percent; however, this is based on uncertain population size and incomplete surveys of its range (Angliss and Allen, 2009). Fishery interactions may threaten this stock but fishery-related mortality levels can be determined to have met a zero mortality and serious injury rate.

Hawaii stock: The best available abundance estimate for this stock is 174 whales based on a 2002 survey of the entire Hawaiian Islands EEZ (Barlow, 2003) with a PBR of 0.2 whales per year (Carretta et al., 2010). Data is not available to determine a population trend for this stock. Insufficient information is available to determine whether the total fishery mortality and serious injury for fin whales is insignificant and approaching zero mortality and serious injury rate.

Commercial whaling for this species ended in the North Pacific Ocean in 1976. Other current threats not listed by stock include reduced prey abundance due to overfishing, habitat degradation, disturbance from low-frequency noise and the possibility that illegal whaling or resumed legal whaling would cause removals at biologically unsustainable rates. Of all species of large whales, fin whales are most often reported as hit by vessels (Jensen and Silber, 2003).

North Pacific right whale *(Eubalaena japonica):* Adults are generally between 45 and 55 feet (13.7-16.7 m) long and can weigh up to 70 tons (140,000 lbs; 63,502 kg). Females are larger than males, and give birth to their first calf at an average age of 9-10 years. Calves are 13-15 feet (3.9-4.6 m) long at birth. Gestation lasts approximately 1 year. Calves are usually weaned toward the end of their first year. It is believed that right whales live at least 50 years, but there are few data on their longevity.

In April 2008, the North Pacific right whale was listed as a separate, endangered species. The same two areas that were designated as critical habitat for the northern right whale are now designated as critical habitat for the North Pacific right whale.

North Pacific right whales inhabit the Pacific Ocean, particularly between 20° and 60° latitude. Before commercial whalers heavily exploited right whales in the North Pacific, concentrations were found in the Gulf of Alaska, eastern Aleutian Islands, south central Bering Sea, Sea of Okhotsk, and Sea of Japan. Recently, there have been few sightings of right whales in the central North Pacific and Bering Sea. Sightings have been reported as far south as central Baja California in the eastern North Pacific, as far south as Hawaii in the central North Pacific, and as far north as the sub-Arctic waters of the Bering Sea and sea of Okhotsk in the summer. Since 1996, right whales have been consistently observed in Bristol Bay, southeastern Bering Sea, during the summer months.

Migratory patterns of the North Pacific right whale are unknown, although it is thought the whales spend the summer on high-latitude feeding grounds and migrate to more temperate waters during the winter.

There are no reliable estimates of current abundance or trends for right whales in the North Pacific. However, the pre-exploitation size of this stock exceeded 11,000 animals.
In general, there are no data on trends in abundance for either the eastern or western population. For the western North Pacific, sighting survey estimates for the summer feeding ground indicate an abundance of around 900 in the Sea of Okhotsk. It is clear that this population is significantly larger than that in the eastern North Pacific. Over the past forty years, most sightings in the eastern North Pacific have been of single whales. However, during the last few years, small groups of right whales have been sighted (Wade et al., 2006, 2011). This is encouraging but there has been only one confirmed sighting of calves in the 20th century.

In the North Pacific, ship strikes and entanglements may pose a threat to right whales. However, because of the whales rare occurrence and scattered distribution, it is impossible to assess the impact of anthropogenic threats at this time. The reasons for the apparent lack of recovery for right whales in this region are unknown.

Humpback whale *(Megaptera novaeangliae):* The humpback whale is a mid-sized baleen whale with a humped dorsal, long pectoral flippers and a distinctive individually indentifiable ventral fluke pattern. They occur throughout the world's oceans, generally over continental shelves, shelf breaks, and around some oceanic islands (Balcomb and Nichols, 1978; Whitehead, 1987). Humpback whales exhibit seasonal migrations between warmer temperate and tropical waters in winter and cooler waters of high prey productivity in summer. They exhibit a wide range of foraging behaviors, and feed on many prey types including small schooling fishes, krill, and other large zooplankton.

Humpback whale reproductive activities occur primarily in winter. They become sexually mature at age four to six. Females are believed to become pregnant every two to three years and nurse their calves for up to 12 months. The age distribution of the humpback whale population is unknown, but the portion of calves in various populations has been estimated at about 4 to 12 percent (Chittleborough, 1965; Herman et al., 1980; Whitehead, 1982; Bauer, 1986; Clapham and Mayo, 1987). Sources and rates of natural mortality are generally unstudied, but may include parasites, disease, predation (killer whales, false killer whales, and sharks), biotoxins, and ice entrapment.

Their summer range includes coastal and inland waters from Point Conception, California, north to the Gulf of Alaska and the Bering Sea, and west along the Aleutian Islands to the Kamchatka Peninsula and into the Sea of Okhotsk (Tomlin, 1967; Nemoto, 1957; Johnson and Wolman, 1984). Humpback whales also summer throughout the central and western portions of the Gulf of Alaska, including Prince William Sound, around Kodiak Island, and along the southern coastline of the Alaska Peninsula. Japanese scouting vessels continued to observe high densities of humpback whales near Kodiak Island during 1965–1974 (Wada, 1980). In Prince William Sound, humpback whales have congregated near Naked Islands, in Perry Passage, near Cheega Island, in Jackpot, Icy and Whale Bays, in Port Bainbridge and north of Montague Islands between Green Island and the Needle (Hall, 1979, 1982; von Ziegesar, 1984; von Ziegesar and Matkin, 1986). The few sightings of humpback whales in offshore waters of the central Gulf of

Alaska are usually attributed to animals migrating into coastal waters (Morris et al., 1983), although use of offshore banks for feeding is also suggested (Brueggeman et al., 1987).

Winter breeding areas are known to occur in Hawaii, Mexico, and south of Japan. Around the Hawaiian Islands, humpback whales are most concentrated around the larger islands of Maui, Molokai, Lanai, and Kahoolawe. Newborn and nursing calves with cows are seen throughout the winter and comprise 6 to 11 percent of all humpbacks sighted during aerial surveys. Humpbacks from the Mexican wintering grounds are found with greatest frequency on the central California summering ground (NMFS, 1991). In the western Pacific, humpbacks have been observed in the vicinity of Taiwan, Ogasawara Islands, and Northern Mariana Islands (NMFS, 1991).

Population estimates for the entire North Pacific increased from 1,200 in 1966 to 6,000-8,000 in 1992. More recently, photo-identification results from SPLASH, an international collaborative research program on the abundances, population structure, and potential human impacts on humpback whales in the North Pacific involving more than 50 research groups and 300 researchers, estimated the abundance of humpback whales in the North Pacific to be just under 20,000 animals (Calambokidis et al., 2008). The population is estimated to be growing six to seven percent annually (Carretta et al., 2010). The SPLASH study collected data from all known wintering and feeding areas for humpback whales in the North Pacific, and the data suggest the likely existence of missing wintering areas that have not been previously described. Humpback whales that feed off the Aleutians and in the Bering Sea were not well represented on any of the sampled wintering areas and must be going to one or more unsampled winter locations (Calambokidis et al., 2008).

Three management units of humpback whales are recognized within the North Pacific: the eastern North Pacific, the central North Pacific stock, and the western North Pacific stock.

Eastern North Pacific stock: The eastern North Pacific stock is referred to as the winter/spring population in coastal Central America and Mexico which migrates to the coast of California to southern British Columbia in summer/fall (Steiger et al., 1991; Calambokidis et al., 1993). The best available abundance estimate for this stock is 2,043 whales and appears to be increasing in abundance (Carretta et al., 2010). The estimated annual mortality and injury due to entanglement (3.2 whales/yr), other anthropogenic sources (zero), plus ship strikes (0.4) in California is less than the PBR allocation of 11.3 whales annually for U.S. waters. Recent studies indicate humpbacks are sensitive to anthropogenic noise in the mid-frequency range but the long term effects of this on the stock have yet to be determined.

Central North Pacific stock: The central North Pacific humpback whale stock is referred to as the winter/spring population of the Hawaiian Islands which migrates to northern British Columbia/Southeast Alaska and Prince William Sound west to Kodiak (Baker et al., 1990; Perry et al., 1990; Calambokidis et al., 1997). Population estimates vary for this stock, but the most recent N_{min} was calculated to be 5,833 (Allen and Angliss, 2010). The stock appears to be increasing, with a PBR of 61.2 animals. It is impacted by fishery interactions (3.8 whales seriously injured or killed annually) and ship strikes (1.6 animals/year).

Western North Pacific stock: The western North Pacific Stock is referred to as the winter/spring population of Japan and probably migrates to waters west of the Kodiak Archipelago (the Bering

Sea and Aleutian Islands) in summer/fall (Berzin and Rovnin, 1966; Nishiwaki, 1966; Darling, 1991). This population is estimated to include 938 individuals and the PBR is calculated to be 2.6. Current data indicate the population size is trending upwards but no confidence limits are available. Fisheries interactions result in an annual mortality rate of 0.2 whales.

Sperm whale *(Physeter macrocephalus):* Sperm whales are the largest of the odontocetes and the most sexually dimorphic cetacean, with males considerably larger than females. Adult females may grow to lengths of 11 m and weigh 15 tons. Adult males, however, reach about 16 m and may weigh as much as 45 tons. The sperm whale is distinguished by its extremely large head, which takes up to 25 to 35 percent of its total body length. Sperm whales are uniformly dark gray with some white near the belly and mouth; have a single blowhole positioned toward the front left side of the head; and the body anterior to the head is wrinkled with a low dorsal hump two thirds back.

Sperm whales are deep divers and their principle prey is large squid, but they will also eat large demersal and mesopelagic sharks, skates, and fishes. The average dive lasts about 35 minutes and is usually down to 400 m, however dives may last over an hour and reach depths over 1,000 m.

Female sperm whales reach sexual maturity around 9 years of age when they are roughly 9 m long. At this point, growth slows and they produce a calf approximately once every 5 years. After a 14 to 16 month gestation period, a single calf about 4 m long is born. Although calves will eat solid food before one year of age, they continue to suckle for several years. Females are physically mature around 30 years and 10.6 m long, at which time they stop growing. Males reach physical maturity around 50 years and when they are approximately 16 m long. Males often do not actively participate in breeding until their late 20s.

Most females will form lasting bonds with other females of their family, and on average 12 females and their young will form a family unit. While females generally stay with the same unit all their lives in and around tropical waters, young males between 4 and 21 years old form "bachelor schools", comprised of other males that are about the same age and size. As males get older and larger, they begin to migrate to higher latitudes and slowly bachelor schools become smaller, until the largest males end up alone. Older, larger males are generally found near the edge of pack ice in both hemispheres. On occasion, however, these males will return to the warm water breeding area.

Sperm whales tend to inhabit areas with a water depth of 600 m or more, and are uncommon in waters less than 300 m deep. Female sperm whales are generally found in deep waters (at least 1,000 m) of low latitudes (less than 40°, except in the North Pacific where they are found as high as 50°). These conditions generally correspond to sea surface temperatures greater than 15°C, and while female sperm whales are sometimes seen near oceanic islands, they are typically far from land.

Sperm whales inhabit all oceans of the world. They can be seen close to the edge of pack ice in both hemispheres and are also common along the equator, especially in the Pacific. Their distribution is dependent on their food source and suitable conditions for breeding, and varies

with the sex and age composition of the group. Their migrations are not as predictable or well understood as migrations of most baleen whales. In some mid-latitudes, there seems to be a general trend to migrate north and south depending on the seasons, moving poleward in summer. However, in tropical and temperate areas, there appears to be no obvious seasonal migration.

Currently, no good estimate is available for the total number of sperm whales in the Pacific. For management purposes, sperm whales inhabiting U.S. pacific waters have been divided into three stocks:

California-Oregon-Washington stock: Sperm whales are found year-round in California waters, but they reach peak abundance from April through mid-June and from the end of August through mid-November. They have been seen in every season except winter in Washington and Oregon. The most precise and recent estimate of sperm whale abundance for this stock is 971 animals from the ship surveys conducted in 2005 (Forney, 2007) and 2008 (Barlow, 2010). Survey data from the last few decades indicate that sperm whale abundance has been rather variable off California and does not show obvious trends. The offshore driftnet gillnet fishery is the main threat to this stock. The PBR for this stock is set at 1.5 whales per year.

North Pacific (Alaska) stock: The shallow continental shelf apparently bars the movement of sperm whales into the northeastern Bering Sea and Arctic Ocean. Males are thought to move north in the summer to feed in the Gulf of Alaska, Bering Sea, and waters around the Aleutian Islands. Current and historic estimates for the abundance of sperm whales in the North Pacific are considered unreliable. The number of sperm whales of the North Pacific occurring within Alaska waters is unknown. Consequently, the PBR for this stock is unknown. Potential entanglement in fishing gear is a growing concern for this stock as whales have been observed depredating in several commercial Alaskan fisheries.

Hawaiian stock: Summer/fall surveys in the eastern tropical Pacific show that although sperm whales are widely distributed in the tropics, their relative abundance tapers off markedly westward towards the middle of the tropical Pacific and tapers off northward towards the tip of Baja California. The best estimate for sperm whales occurring in U.S. waters of Hawaii is 6,919 (Barlow, 2006); however, no population trend is available. The PBR for this stock is 7.6 animals per year. Commercial longline fisheries are a threat to this stock though no serious injuries or mortalities of sperm whales were reported from 1998 to 2002.

The greatest natural predators to sperm whales are killer whales, which have been documented killing at least one sperm whale in California waters. Typically, however, it is believed that most killer whale attacks are unsuccessful. Pilot whales have been observed harassing sperm whales, but it is unclear if they pose any real threat (Perry et al., 1999). Large sharks may also be a threat, especially for young sperm whales.

The greatest threat for sperm whales has been man, especially with the advent of whaling. By 1987, whalers took at least 345,000 sperm whales in the North Pacific and North Atlantic Oceans combined, with approximately 99 percent coming from North Pacific stocks (Perry et al., 1999). Hunting of sperm whales by commercial whalers declined in the 1970s and 1980s, and virtually ceased with the implementation of a moratorium against whaling by the IWC in 1988. Sperm

whales are still being targeted in a few areas; there is a small catch by primitive methods in Lamalera, Indonesia, and Japan takes sperm whales for scientific purposes.

In addition to whaling, sperm whales may be impacted by shipping traffic, noise disturbance, and fishing operations. Sperm whales have the potential to be harmed by ship strikes and entanglements in fishing gear, although these are not as great of a threat to sperm whales as they are to more coastal cetaceans. Disturbance by anthropogenic noise may prove to be an important habitat issue in some areas of this population's range, notably in areas of oil and gas activities or where shipping activity is high. Another potential human-cased source of mortality is from accumulation of stable pollutants (e.g. polycholorobiphenyls, chlorinated pesticides, polycyclic aromatic hydrocarbons, and heavy metals). Stable pollutants might affect the health or behavior of sperm whales. The potential impact of coastal pollution may be an issue for this species in portions of its habitat, though little is known on this to date. In efforts to recover this species, the NMFS' recovery plan for sperm whales noted that the potential effects of pollutants is poorly understood and should be determined (2006). At present, because of their general offshore distribution, sperm whales are less likely to be impacted by humans, and those impacts that do occur are less likely to be recorded.

Eastern North Pacific Southern Resident Killer Whale stock *(Orcinus orca):* Killer whales show considerable size dimorphism. Adult males develop larger pectoral flippers, dorsal fins, tail flukes, and girths than females. Male adult killer whales reach up to 32 feet (9.8 m) in length and weigh nearly 22,000 pounds (10,000 kg); females reach 28 feet (8.5 m) in length and weigh up to 16,500 pounds (7,500 kg). Sexual maturity of female killer whales is achieved when the whales reach lengths of approximately 15-18 feet (4.6 m-5.4 m), depending on geographic region. The gestation period for killer whales varies from 15-18 months, and birth may take place in any month. Calves are nursed for at least one year, and may be weaned between one and two years of age. The birth rate for killer whales is not well understood, but is estimated as every five years for an average period of 25 years. Life expectancy for wild female killer whales is approximately 50 years, with maximum longevity estimated at 80-90 years. Male killer whales typically live for about 30 years, with maximum longevity estimated at 50-60 years.

Resident killer whales in the North Pacific consist of Southern, Northern, Southern Alaska, and Western Alaska North Pacific Residents. The Southern Resident killer whale (SRKW) stock contains three pods (or stable family-related groups): J, K, and L pods. Their range during the spring, summer, and fall includes the inland waterways of Puget Sound, Strait of Juan de Fuca, and Southern Georgia Strait. Their occurrence in the coastal waters off Oregon, Washington, Vancouver Island, and more recently off the coast of central California in the south and off the Queen Charlotte Islands to the north has been documented. Little is known about the winter movements and range of the Southern Resident stock. Southern Residents have not been observed associating with other resident whales, and mitochondrial and nuclear genetic data suggest that Southern Residents rarely interbreed with other killer whale populations.

The population is currently estimated at about 88 whales, with a PBR of 0.17 animals per year. The estimated population shows a decline from its estimated historical level of about 200 during the mid- to late 1800s. Beginning in about 1967, the live-capture fishery for oceanarium display removed an estimated 47 whales and caused an immediate decline in SRKW numbers. The

population fell an estimated 30% to about 67 whales by 1971. By 2003, the population increased to 83 whales.

Hawaiian Insular stock of false killer whales (*Pseudorca crassidens*): NMFS has proposed that the Hawaiian Insular stock of false killer whales is a distinct population segment and should be listed as endangered under the ESA. Thus, for this analysis will be treated as if it is listed under the ESA.

The species is a slender, large delphinid, with maximum reported sizes of 6 m for males and 5 m for females (Jefferson et al., 2008). Large individuals may weigh up to 2,000 kg. Little is known about the breeding behavior of false killer whales in the wild, but some information is available from false killer whales held in oceanaria (Brown et al., 1966). Gestation has been estimated to last 11 to 16 months, (Kasuya, 1986; Odell and McClune, 1999). Females with calves lactate for 18 to 24 months (Perrin and Reilly, 1984).

Estimated age at sexual maturity is about 8 to 11 years for females, while males may mature 8 to 10 years later (Kasuya, 1986). The maximum reported age has been estimated as 63 years for females and 58 years for males (Kasuya, 1986). Both sexes grow 40 to 50 percent in body length during their first year of life. Growth ceases between 20 and 30 years of age (Ferreira, 2008).

Coloration of the entire body is black or dark gray, although lighter areas may occur ventrally between the flippers or on the sides of the head. A prominent, falcate dorsal fin is located at about the midpoint of the back, and the tip can be pointed or rounded. The head lacks a distinct beak, and the melon tapers gradually from the area of the blowhole to a rounded tip. The pectoral fins have a unique shape among the cetaceans, with a distinct central hump creating an S-shaped leading edge.

False killer whales are top predators, eating primarily fish and squid, but also occasionally taking marine mammals (Oleson et al., 2010). False killer whales feed both during the day and night and they can dive over 230m looking for prey. (Baird et al., unpublished)

Within waters of the central Pacific, four Pacific Islands Region management stocks of false killer whales are currently recognized for management under U.S. MMPA: the Hawaii insular stock, the Hawaii pelagic stock, the Palmyra Atoll stock, and the American Samoa stock (Carretta et al., 2010)

Hawaiian insular false killer whales share a portion of their range with the genetically distinct pelagic population (Forney et al., 2010). Therefore, the draft 2010 Stock Assessment Report (SAR) for false killer whales recognizes an overlap zone between insular and pelagic false killer whales between 40 km and 140 km from the main Hawaiian Islands based on sighting, telemetry, and genetic data (Chivers et al., 2007 and 2010, Forney et al., 2010; Carretta et al., 2010). Individuals utilize habitat overlaying a broad range of water depths, varying from shallow (<50m) to very deep (>4,000m) (Baird et al., 2010).

Hawaiian insular false killer whales are behaviorally unique because they are the only population of the species known to have movements restricted to the vicinity of an oceanic island group.

This behavioral separation is supported by their linkage through a tight social network, without any linkages to animals outside of the Hawaiian Islands. Their habitat differs as well from other false killer whale populations because they are found primarily in island-associated waters that are relatively shallow and productive compared to surrounding oligotrophic waters. False killer whales are highly social mammals with long interbirth intervals and reproductive senescence suggesting transfer of knowledge is important to successfully persist in this unique Hawaiian habitat.

NMFS has determined that Hawaiian insular false killer whales are discrete from other false killer whales and are significant to the taxon based on genetic discontinuity and behavioral factors (the uniqueness of their behavior related to habitat use patterns).

The draft 2010 SAR for Hawaiian insular false killer whales (Carretta et al., 2010) gives the best estimate of current population size as 123 individuals (coefficient of variation, or CV = 0.72), citing Baird et al. (2005). The current best estimates of population size for Hawaiian insular false killer whales are 151 individuals (CV = 0.20) without the animals photographed at Kauai, or 170 individuals (CV = 0.21) with them. The calculated PBR for the insular stock is .61 animals per year (Caretta et al., 2010). The large groups sizes observed in 1989, together with the declining encounter rates from 1993 through 2003 suggest that Hawaiian insular false killer whales have declined substantially in recent decades. The primary threat to insular false killer whales is deep and shallow set long line fishing with an estimated mortality or serious injury of .6 (CV=1.3) animals per year. Additional anthropogenic threats include habitat degradation and bioaccumulation of toxins.

Hawaiian Monk Seal (*Monachus schauinslandi*):
The Hawaiian monk seal is listed as endangered under the ESA and depleted under the MMPA, and is listed on CITES Appendix I. Hawaiian monk seals are distributed predominantly in six Northwestern Hawaiian Islands (NWHI) subpopulations at French Frigate Shoals, Laysan and Lisianski Islands, Pearl and Hermes Reef, and Midway and Kure Atoll. Small numbers also occur at Necker, Nihoa, and the main Hawaiian Islands (MHI). On average, 10-15% of the seals migrate among the NWHI subpopulations (Johnson and Kridler, 1983; Harting, 2002). Thus, the NWHI subpopulations are not isolated, though the different island subpopulations have exhibited considerable demographic independence. Observed interchange of individuals among the NWHI and MHI regions is rare, yet preliminary genetic stock structure analysis (Schultz et al., 2011) suggests the species is appropriately managed as a single stock.

The best estimate of the total population size is 1,161. (Caretta et al., 2010). This estimate is the sum of estimated abundance at the six main Northwest Hawaiian Islands subpopulations, an extrapolation of counts at Necker and Nihoa Islands, and an estimate of minimum abundance in the main Hawaiian Islands.

The total of mean non-pup beach counts at the six main reproductive NWHI subpopulations in 2007 is 68% lower than in 1958. A log-linear regression of estimated abundance on year from 1999 (the first year for which a reliable total abundance estimate has been obtained) to 2008 estimates that abundance has declined -4.5% yr-1 (95% CI= -5.0% to -3.9% yr-1). There are multiple sources of mortality and serious injury impending recovery of the species and include

fisheries interactions (entanglement in active and ghost gear), food limitation, male aggression, shark predation and disease/parasitism.

Guadalupe fur seal (*Arctocephalus townsendi*): The Guadalupe fur seal is listed as threatened under the ESA and depleted under the MMPA. They are distributed along the west coast, centered around Guadalupe Island off the west central Baja California coast. Their population has expanded in recent years and small colonies have formed in the Channel and Farallon Islands off of California.

The best estimate of the total population size is from 1993 and is 7,408. (Caretta et al., 2009), with an estimated growth rate of 13.7% and a PBR of 91 animals per year.

There is limited data on anthropogenic impacts to the species, but may include fisheries interactions (e.g., gear entanglement). U.S. fisheries observer data indicate that the impact is neglible, in U.S. waters however the level of impact in Mexican waters is unknown.

Steller sea lions (*Eumetopias jubatus*): Steller sea lions (SSLs) prefer the colder temperate to sub-arctic waters of the North Pacific Ocean. Haul outs and rookeries usually consist of beaches (gravel, rocky or sand), ledges, rocky reefs. In the Bering Sea and Okhotsk Sea, sea lions may also haul out on sea ice, but this is considered atypical behavior. Critical habitat has been defined for Steller sea lions as a 20 nautical mile buffer around all major haul-outs and rookeries, as well as associated terrestrial, air and aquatic zones, and three large offshore foraging areas.

SSLs are distributed mainly around the coasts to the outer continental shelf along the North Pacific Ocean rim from northern Hokkaiddo, Japan through the Kuril Islands and Okhotsk Sea, Aleutian Islands and central Bering Sea, southern coast of Alaska and south to California. For management purposes, Steller sea lions inhabiting U.S. waters have been divided into two Distinct Population Segments (DPSs) at 144° West longitude (Cape Suckling, Alaska). The differentiation is based primarily on genetic and physical differences, but also on differing population trends in the two regions. The Western DPS includes SSLs that reside in the central and western Gulf of Alaska, Aleutian Islands, as well as those that inhabit the coastal waters and breed in Asia (e.g., Japan and Russia). The Eastern DPS includes sea lions living in southeast Alaska, British Columbia, California, and Oregon.

Approximately 39,000-45,000 SSLs are in the Western DPS and 44,500-48,000 in the Eastern DPS. The Western DPS declined by 75% between 1976 and 1990, and decreased another 40% between 1991 and 2000 (the average annual decline during this period was 5.4%). Since the 1970s, the most significant drop in numbers occurred in the eastern Aleutian Islands and the western Gulf of Alaska. The extent of this decline led NMFS to list the Steller sea lion as threatened range-wide under the ESA in April 1990. However, NMFS recently received two petitions to delist the Eastern DPS and is soliciting comments on these requests. In the 1990s, the decline continued in the Western portions of the range leading NMFS to divide the species into two DPSs, Eastern and Western, and list the Western DPS as endangered in 1997. Population surveys suggest that the Eastern DPS is stable or increasing in the northern part of its range (Southeast Alaskan and British Columbia), while the remainder of the Eastern DPS and all the Western DPS is declining.

SSLs in southeast Alaska are not an isolated population, as demonstrated by the movement of branded and tagged animals from southeast Alaska to British Columbia and Washington (Raum-Suryan et al., 2002). In addition, recent mitochondrial deoxyribonucleic acid studies with large samples of pups from newly established rookeries in the eastern DPS have shown that some females born in the western DPS are pupping in the eastern DPS (NMFS, unpublished data).

Overall, the Eastern DPS has increased over 3 percent per year since the 1970s, more than doubling in southeast Alaska, British Columbia, and Oregon. The Eastern DPS contained only about 10 percent of the total number of SSLs in the United States in the 1970s. However, large declines in the Western DPS coupled with notable increases in the east resulted in a shift such that over half of the SSLs in the U.S. now belong to the Eastern DPS (NMFS, 2006).

Anthropogenic threats to SSLs include boat strikes, contaminants/pollutants, habitat degradation, illegal hunting/shooting, offshore oil and gas exploration, direct and indirect interactions with fisheries, and subsistence harvests by natives in Alaska and Canada (150-300 taken a year). In the 1800s, they were targeted by hunters for their meat (food), fur hides (clothing), oil, and various other products. In the early 1900s, fishermen killed and placed bounties on this species, which they blamed for stealing fish from them. Some SSLs were killed to limit their predation on fish in aquaculture facilities (fish farms), but intentional killing of SSLs has not been permitted since they were protected under the MMPA and listed under the ESA.

Steller sea lions' direct and indirect interactions with fisheries are currently receiving significant attention and may possibly be an important factor in their decline. Direct fishing impacts are largely due to fishing gear (drift and set gillnets, longlines, trawls, etc.) that has the potential to entangle, hook, injure, or kill sea lions. These pinnipeds have been seen entangled in fishing equipment with what are considered "serious injuries." SSLs are also indirectly threatened by fisheries because they have to compete for food resources and critical habitat may be modified by fishing activities.

Non-ESA Listed Species

Of the non-listed cetacean and pinniped species, two have stocks considered depleted under the MMPA and six have stocks that are data deficient with no population estimate available:

Species	Stock	MMPA status	Minimum Population Estimate
Killer whales	AT1 Transient	Depleted	7
Northern Fur Seal	Eastern Pacific	Depleted	687, 902
Baird's beaked whale	Alaska	Not-depleted	unknown
Cuvier's beaked whale	Alaska	Not-depleted	unknown
Stejneger's beaked whale	Alaska	Not-depleted	unknown
Dwarf sperm whale	California / Oregon / Washington	Not-depleted	unknown
Pygmy sperm whale	California / Oregon / Washington	Not-depleted	unknown
Minke Whale	Hawaii	Not-depleted	unknown
Minke Whale	Alaska	Not-depleted	unknown

The remaining non-listed species marine mammals are from populations that are considered either stable or increasing in size. More information about each stock may be found in the respective Stock Assessment Reports, which are available online at http://www.nmfs.noaa.gov/pr/sars/species.htm.

Non-Target Marine Animals

In addition to the non-target marine mammal stocks and species that are listed in Table 1, an assortment of sea birds, sea turtles, fish and invertebrates may be found in the action area during the proposed research. However, merely being present does not mean a marine organism will be affected by the proposed action. Research would be directed only at marine mammals, and thus is not expected to affect non-target marine animals. For these reasons, the effects on non-target species are not considered further.

Biodiversity and Ecosystem Function

The proposed action is directed at marine mammals and does not interfere with benthic productivity, predator-prey interactions or other biodiversity or ecosystem functions. Marine mammals would not be removed from the ecosystem or displaced from habitat, nor would the permitted takes affect their diet or foraging patterns. Further, the proposed action does not involve activities known or likely to result in the introduction or spread of non-indigenous species, such as ballast water exchange or movement of vessels among water bodies. Thus, effects on biodiversity and ecosystem function would not be considered further.

Ocean and Coastal Habitats

The action area includes designated critical habitat for Steller's sea lions, North Pacific right whales, southern resident killer whales, and proposed critical habitat for Cook Inlet beluga whales and leatherback turtles. The proposed action is directed at marine mammals and does not

affect habitat. It does not involve alteration of substrate, movement of water or air masses, or other interactions with physical features of ocean and coastal habitat. Thus, effects on habitat would not be considered further.

Unique Areas
Research may be conducted in the marine portion of several sanctuaries, monuments, and marine protected areas located within the action area and include:

• Olympic Coast National Marine Sanctuary
• Hawaiian Islands Humpback Whale National Marine Sanctuary
• Fagatele Bay National Marine Sanctuary
• Papahanaumokuakea Marine National Monument
• Pacific Remote Islands Marine National Monument
• Mariana Arc of Fire National Wildlife Refuge
• Palmyra Atoll National Wildlife Refuge
• Kingman Reef National Wildlife Refuge
• Johnston Atoll National Wildlife Refuge
• Wake Atoll National Wildlife Refuge
• Cordell Bank National Marine Sanctuary
• Gulf of the Farallones National Marine Sanctuary
• Channel Islands National Marine Sanctuary
• Monterey Bay National Marine Sanctuary

Essential fish habitat (EFH) designated for various species of fish, which includes hard and soft bottom substrates is also located throughout the action area. The proposed action is directed at marine mammals and does not alter or affect unique areas, including any components of EFH.

The Office of National Marine Sanctuaries (ONMS) was consulted regarding the proposed action and advised that the applicant would be required to obtain a multi-sanctuary permit and a monument permit from their office. The applicant is aware of this will obtain the necessary permits from the ONMS.

Historic Places, Scientific, Cultural, and Historical Resources
There are no districts, sites, highways or structures listed in or eligible for listing in the National Register of Historic Places in the action area. The proposed action represents non-consumptive use of marine mammals and does not preclude their availability for other scientific, cultural, or historic uses, including subsistence harvest by Alaskan Natives. Thus, effects on such resources will not be considered further.

Social and Economic Resources
The proposed action does not affect distribution of environmental burdens, access to natural or depletable resources or other social or economic concerns. It does not affect traffic and transportation patterns, risk of exposure to hazardous materials or wastes, risk of contracting disease, risk of damages from natural disasters, food safety, or other aspects of public health and safety. Thus, effects on such resources will not be considered further.

4.0 ENVIRONMENTAL CONSEQUENCES

Effects of the No Action Alternative
There are no direct or indirect effects on the environment of not issuing the permit. The takes of marine mammals, including those listed as threatened or endangered, resulting from the applicant's research would not be exempted. It is unlikely the applicant would conduct the research in the absence of a permit, because to do so would risk sanctions and enforcement actions.

Effects of the Proposed Permit Alternative
Effects would occur at the time when the applicant's research results in takes of marine mammals, including those listed as threatened or endangered. See Appendix C for information on specific takes requested.

The activities requested in the permit application would allow research conducted since 2005 under Permit No. 731-1774, and under various prior scientific research permits, to continue for five additional years. The number of animals proposed to be taken annually would be slightly higher than is currently authorized for some species, but would not be substantially different from the level of effort currently authorized under Permit No. 731-1774. The overall effects of issuing the permit would be similar to the effects of issuing Permit No. 731-1774, which has been amended 6 times since issuance. An EA of the initial permit and of subsequent major amendments resulted in a FONSI each time. Research activities may result in short-term behavioral responses by individuals, but would not be expected to result in stock- or species-level effects. A Biological Opinion (BO) was also prepared for this request and issued on July 6, 2011. The BO concluded that the proposed action would not likely jeopardize the continued existence of any ESA-listed species and would not likely destroy or adversely modify designated critical habitat (NMFS, 2011).

The issue most relevant to this analysis is the potential for negative impacts on the target species. It is important to recognize that an adverse effect on a single individual or a small group of animals does not translate into an adverse effect on the population or species unless it results in reduced reproduction or survival of the individual(s) that causes an appreciable reduction in the likelihood of survival or recovery for the species. In order for the proposed action to have an adverse effect on a species, the exposure of individual animals to the research activities would first have to result in:

- direct mortality,
- serious injury that would lead to mortality, or
- disruption of essential behaviors such as feeding, mating, or nursing, to a degree that the individual's likelihood of successful reproduction or survival was substantially reduced.

Subsequently, mortality or reduction in the individual's likelihood of successful reproduction or survival would then have to result in a net reduction in the number of individuals of the species. In other words, the loss of the individual or its future offspring would not be offset by the

addition, through birth or emigration, of other individuals into the population. That net loss to the species would have to be reasonably expected, directly or indirectly, to appreciably reduce the likelihood of both the survival and recovery of the listed species in the wild.

Level B harassment, as defined by the MMPA, would occur during vessel surveys, photo-identification activities, sub-surface observation, and aerial surveys. The differences in close approach activities requested in the proposed action from what was previously authorized are limited to small increases in the number of animals that would be taken, and would not be expected to have any additional effects that were not analyzed in previous EA's.

Level B harassment from large and small vessel surveys and photo-identification, as described above, would occur concurrently with Level A harassment activities.

Level A harassment, as defined by the MMPA, would occur during tagging activities, when physical contact is made that has the potential to injure animals. Actual injury would be minimized by conditions of the permit limiting how sampling and attachment of tags may occur, such as avoiding sensitive areas of the body. Dr. Baird would also minimize potential disturbance or physical risk by:

- Limit time spent in the vicinity of target animals and the number of attempts made to deploy tags in order to minimize incidental harassment or disturbance from the presence of the small boat or the activities; and

- Sterilizing dart tags in a multi-step process to minimize the risk of infection.

All tag types to be used for this action were fully analyzed in the EA for Southwest Fisheries Science Centers permit (File No. 14097, Appendix A) (NMFS, 2010) and two Categorical Exclusion (CE) memos for amendments to Permit No. 731-1774. The proposed listing of Hawaiian insular false killer whales is the only additional consideration that requires further analysis here.

Behavioral reactions of 14 cetacean species to dart-tagging activity carried out from 2006-2009, are summarized by species in Table 2 (Baird, unpublished data). The few short term strong reactions lasted less than 15 minutes and no significant long term individual reactions were documented in post-tagging observations of over 40 individuals.

Table 2. Reactions to satellite and VHF dart-tagging by species, 2006 - 2009. Reaction levels follow Weinrich et al. (1992) and Berrow et al. (2002).

Species (N)	No Reaction # (%)	Low Level (e.g. slight acceleration) # (%)	Moderate (e.g. Fast dive, tail flick, acceleration) # (%)	Strong (e.g. several tail flicks, breaches) # (%)
Short-finned pilot whale (40)	0 (0)	1 (3)	38 (95)	1 (3)
False killer whale (23)	2 (9)	0 (0)	21 (91)	0 (0)
Melon-headed whale (13)	0 (0)	0 (0)	13 (100)	0 (0)
Pygmy killer whale (4)	0 (0)	0 (0)	4 (100)	0 (0)
Killer whale (9)	1 (11)	2 (22)	6 (67)	0 (0)
Risso's dolphin (2)	0 (0)	1 (50)	1 (50)	0 (0)
Bottlenose Dolphin (1)	0 (0)	0 (0)	0 (0)	1 (100)
Blainville's beaked whale (11)	0 (0)	0 (0)	11 (100)	0 (0)
Cuvier's beaked whale (8)	0 (0)	0 (0)	8 (100)	0 (0)
Sperm whale (12)	0 (0)	2 (17)	10 (83	0 (0)
Fin whale (16)	7 (44)	4 (25)	5 (31)	0 (0)
Minke whale (1)	0 (0)	0 (0)	0 (0)	1 (100)
Blue whale (3)	1 (33)	1 (33)	1 (33)	0 (0)
Humpback whale (1)	0 (0)	1 (100)	0 (0)	0 (0)
Total (144)	11 (7.6)	12 (8.3)	118 (81.9)	3 (2.1)

There is no evidence that responses of individual whales, including false killer whales (n=23) would exceed short-term stress and discomfort. No long-term effects would be anticipated. The activities would not be expected to have any additional effects that were not previously analyzed. The short-term behavioral responses that might result from research activities would not likely lead to mortality, serious injury, or disruption of essential behaviors such as feeding, mating, or nursing, to a degree that the individual's likelihood of successful reproduction or survival would be substantially reduced. In addition, conditions and mitigation measures would be placed in the permit to further limit the potential for negative effects from these activities.

Additional risks to individuals from tagging include infection and interruption of blood flow to the tagged area of the body. A review of 17 LIMPET tagging events of four species of Hawaiian odontocetes, including false killer whales was conducted by Hanson (2008). Analysis of photographs collected post tagging, indicate that long term effects are scarring along with some tissue inflammation. There was no indication of infection or necrosis as expected based on prior studies of cetacean skin healing processes (Bruce-Allen and Geraci, 1984, Geraci and Bruce-Allen, 1987). The wounds associated with tagging fell within the range of naturally sustained tissue damage from sources such as cookie cutter sharks, remoras, con-specifics etc., which are

commonly documented in healthy, reproductive cetaceans (McSweeney et al., 2007, Walker and Hanson, 1999; McCann, 1974; Heithouse 2001). Additionally, a known successfully reproducing female false killer whale lacking a dorsal fin has been observed in Hawaiian waters (Baird and Gorgone, 2005).

The remaining two tag types are considered to have minimal physical risk. Physiological tags penetrate into the blubber layer where ample cross current circulation exists, and minimal interruption of flow is anticipated. As addressed with dart tags above, risk of infection is considered minimal. Suction cup tags do not penetrate the skin and the behavioral reaction to the approach and attachment are considered the primary effect of the action.

Controversy

Federal agencies are required to consider "the degree to which effects on the quality of the human environment are likely to be highly controversial" when evaluating potential impacts of a proposed action. [40 CFR §1508.27] The application for the proposed permit was made available for public review and comment. No substantive public comments were received.

The application was sent to the Marine Mammal Commission for review at the same time during the comment period, pursuant to 50 CFR §216.33 (d)(2). Comments received on the application were considered as part of the scoping for this EA.

The Marine Mammal Commission (MMC) recommended that NMFS:

- Include a permit condition requiring the applicant to make observations sufficient to detect possible short- and long-term effects of biopsy sampling and tagging and report the effort made and the information collected to the Permit Office;

- Ensure the activities to be conducted under this permit and those of other permit holders who might be conducting research on the same species in the same areas are coordinated and, as possible, data and samples shared to avoid duplicative research and unnecessary disturbance of animals; and

- Advise the applicant of the need to obtain a permit under the Convention on International Trade in Endangered Species of Wild Fauna and Flora authorizing the import or export of marine mammal parts.

  NMFS Response: The applicant has not requested biopsy takes under this proposed permit. These recommendations are standard conditions and reporting requirements of a permit and will be included.

Cumulative Effects

Cumulative effects are defined as those that result from incremental impacts of a proposed action when added to other past, present, and reasonably foreseeable future actions, regardless of which agency (federal or nonfederal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions that take place over a period of time.

In general, takes of marine mammals by harassment during permitted research have not been shown to result in long-term or permanent adverse effects on individuals regardless of the number of times the harassment occurs. The frequency and duration of the disturbance under the proposed permit would allow adequate time for animals to recover from adverse effects such that additive or cumulative effects of the action on its own are not expected.

No measurable effects on population demographics are anticipated because any sub-lethal (disturbance) effects are expected to be short-term, and the proposed action is not expected to result in mortality of any animals. There exists the possibility that adverse effects on a species could accrue from the cumulative effects of a large number of permitted takes by harassment relative to the size of a population. However, there is no evidence that current or past levels of permitted takes have resulted in such species level effects.

Summary of Other Actions

The stocks and populations of marine mammals that are the subject of the permit are exposed to a variety of human activities including subsistence harvest (gray whales in Washington; Steller sea lions and northern fur seals in Alaska); entanglement in fishing gear; vessel activity including whale watching; and anthropogenic noise from vessels, military and industrial activities. Anthropogenic activities and ecosystem shifts result from climate and oceanographic changes also alter the marine habitat in the action area.

Subsistence: The levels of harvest are managed under various federal and international laws and treaties and are not believed to have had an adverse impact on the status of the species.

A gray whale harvest by the Makah Tribe in Washington has not occurred since 2000, and future harvests are subject to obtaining a waiver to the MMPA's take moratorium. Harvest quota levels are set by the International Whaling Commission.

Steller sea lions are the target of a co-managed subsistence harvest in Alaska. The average number of animals harvested and struck but lost is 11 animals/year. An unknown number of SSLs from this stock are harvested by subsistence hunters in Canada. The magnitude of the Canadian subsistence harvest is believed to be small.

Northern fur seals are also subject to an annual subsistence harvest in the Pribilof Islands, with an average annual harvest of 562 animals between 2004-2008 (Allen and Angliss, 2010). Illegal intentional killing of northern fur seals by commercial and sport fishers may occur, but no estimates of the level of mortality exist.

Entanglement: Entanglement in fishing gear and ghost gear has been a concern for multiple species in the action area; however, steps taken by NMFS has significantly reduced bycatch and entanglement rates thru use of pingers and gear modifications (Caretta et al., 2010).

Vessel Activity: Many marine mammal populations may be experiencing increased exposure to vessels and associated sounds. Commercial shipping, whale watching, ferry operations, and recreational boating traffic have expanded throughout the action area in recent decades. Commercial fishing boats are also a prominent part of the vessel traffic in many areas. Vessels

have the potential to affect marine mammals through their physical presence and activity and the increased underwater sound levels generated by boat engines. Vessel strikes are rare, but do occur and can result in injury.

Harassment from whale-watching is not regulated by permits, nor are the effects monitored. The growth of whale watching during the past two decades has meant that whales in some areas (Hawaii, Puget Sound, Monterey Bay) are experiencing increased exposure to vessel traffic and sound. This brings added risk for vessel strikes, displacement from habitat and interference with social interaction and communication (Kovacs and Innes, 1990; Kruse, 1991; Wells and Scott, 1997; Samuels and Bejder, 1998; Bejder et al., 1999; Colborn, 1999; Cope et al., 1999; Mann et al., 2000; Samuels et al., 2000; Boren et al., 2001; Constantine, 2001; Nowacek et al., 2001). Not only do greater numbers of boats accompany the whales for longer periods of the day, but there has also been a gradual lengthening of the viewing season in some areas. For example, the mean number of vessels following groups of southern resident killer whales at any one time during the peak summer months increased from five boats in 1990 to an average of 20 boats from 1998-2009, and individual whales sometimes attract much larger numbers of vessels (Koski, 2010). There was documentation of a whale-boat collision in Haro Strait in 2005 which resulted in a minor injury to a killer whale and in 2006, killer whale L98 was killed during a vessel interaction. NMFS has proposed new viewing guidelines to address this issue for SRKW in particular. Federal approach regulations are already in place in Hawaii and Alaska for humpback whales, and viewing guidelines for all marine mammal species are established for the Alaska, Northwest, Southwest, and Pacific Islands regions.

There is evidence that anthropogenic noise has substantially increased the ambient level of sound in the ocean over the last 50 years (Andrew et.al., 2002, McDonald et.al., 2006). Much of this increase is due to increased shipping activity, industrial activity and military operations. Some individuals or populations are regularly exposed to natural and anthropogenic sounds and may tolerate, or have become habituated to, certain levels of exposure to noise (Richardson, 1995). The net effect of disturbance is dependent on the size and percentage of the population affected, the ecological importance of the disturbed area to the animals, and their behavioral plasticity (Geraci and St. Aubin, 1980).

The military uses acoustics to test the construction of new vessels as well as for naval operations, and has recently requested MMPA 101(a)(5)(A) authorization for activities in the Gulf of Alaska Temporary Maritime Activities Area and Northwest Training Range Complex; as well as having been issued Incidental Harassment Authorizations (IHAs) for training activities in their Hawaii Range Complex, Southern California Range Complex, and Mariana Islands Range Complex.

In some areas where industrial and commercial activity takes place, noise originates from the construction of maritime infrastructure, energy generating facilities and structures, operation, and vessel and aircraft support. Many researchers have described behavioral responses of marine mammals to sounds produced by helicopters and fixed-wing aircraft, boats and ships, as well as dredging, construction, and geological explorations (Richardson, 1995; Nowacek et.al., 2007). Most observations have been limited to short-term behavioral responses, which included cessation of feeding, resting, or social interactions. Several studies have demonstrated short-term effects of disturbance on humpback whale behavior (Hall, 1982; Baker et al., 1983; Krieger

and Wing, 1984; Bauer and Herman, 1986, Miller et.al., 2000), but the long-term effects, if any, are unclear or not detectable. Actions such as repair of bridges and ports, as well as explosive removal of structures have been analyzed previously and been found to have a negligible impact on the marine mammal stocks.

Contaminants: Human actions, such as emitting discharge from wastewater facilities, dredging, ocean dumping and disposal, aquaculture, and coastal development are known to have deleterious impacts on marine mammals and their prey's habitat, ultimately affecting the animals themselves as they are bioaccumulated. Point source pollutants from coastal runoff, at sea disposal of dredged material and sewage effluents, oil spills, as well as substantial commercial and recreational vessel traffic and impacts of fishing operations continue to negatively affect marine mammals in the proposed action areas.

Climate Change: The extent to which climate and/or ecosystem changes impact the target cetacean species is largely unknown. However, NMFS recognizes that such impacts may occur based on the biology, diet, and foraging behavior of dolphins and whales. Inter-annual, decadal, and longer time-scale variability in climate can alter the distribution and biomass of prey available to large whales. The effects of climate-induced shifts in productivity, biomass, and species composition of zooplankton on the foraging success of planktivorous whales have received little attention. Such shifts in community structure and productivity may alter the distribution and occurrence of foraging whales in coastal habitats and affect their reproductive potential as well. Similar shifts in prey resources could likewise impact large whales if climate change alters the density, distribution, or range of prey.

Incidental Harassment Authorizations: In addition to scientific research permits, NMFS issues Letters of Authorization (LOAs) and IHAs under the MMPA for the incidental take of marine mammals. NMFS has issued eight IHAs, seven rulemakings, and ten LOAs for the take of multiple target species in the action area.

Other Scientific Research Permits and Authorizations: The number of permits and associated takes by harassment indicate a high level of research effort of some endangered marine mammal species in the proposed action area. This is due, in part, to intense interest in developing appropriate management and conservation measures to recover these species. Given the number of permits, associated takes and research vessels and personnel present in the environment, repeated disturbance of individual large whales is likely to occur in some instances, particularly in coastal areas (due to the proximity to shore). It is difficult to assess the effects of such disturbance. However, NMFS has taken steps to limit repeated harassment and avoid unnecessary duplication of effort through permit conditions requiring coordination among permit holders. NMFS expects that the temporary harassment of individuals would dissipate within minutes, and therefore animals would recover before being targeted for research by another Permit Holder. NMFS would continue to monitor the effectiveness of these conditions in avoiding unnecessary repeated disturbances.

A total of 51 permits and Letters of Confirmation (LOC) authorize the harassment of one or more of the cetacean or pinniped species targeted or incidentally taken in the proposed action area (Appendix B). Nearly all the permits authorize a smaller study area or region within the

Pacific Ocean basin, reducing the chance of repeated harassment of individual whales by researchers. Most of this research does not overlap in area or timing. Some spatial overlap exists for research on species with known feeding or breeding grounds, such as humpback whales. The majority of the takes authorized by these permits are for Level B harassment that would result in no more than disturbance to the target species. LOCs are issued under the General Authorization and confirm that the research would result in no more than Level B harassment of non-ESA marine mammals.

Several of the permits are currently operating under a one-year extension (Appendix B); an extension does not authorize additional takes of the target species but allows researchers to use authorized takes remaining from the last year of the permit for an additional 12 months or until the remaining takes have been exhausted, whichever occurs first. A few of the active permits will expire before Permit No. 15330 can be issued. NMFS expects that some researchers, such as NMFS Science Centers, which are mandated to assess the status of U.S. marine mammal stocks, will request new permits, or renewals, to continue their work once the current permit expires. NMFS cannot predict with certainty the level of take of each species that may be requested in the future but, conservatively, expects the amount of future research to be similar to or slightly greater than current levels as interest in marine conservation, biology, and management of these species grows.

None of the active research permits authorize activities likely to result in the serious injury or mortality of any animal. Further, no such incidences have been reported by permitted cetacean researchers. Therefore, the number of takes proposed by Dr. Baird is not expected to result in a significant adverse impact on the target species, especially considering the majority of the takes are authorized in Dr. Baird's current permit. In addition, all permits issued by NMFS for research on protected species, including the proposed permit, contain conditions requiring the Permit Holders to coordinate their activities with the NMFS regional offices and other Permit Holders conducting research on the same species in the same areas, and, to the extent possible, share data to avoid unnecessary duplication of research and disturbance of animals.

It is also important to note that many of the target whales are migratory and may transit in and out of U.S. waters and the high seas. NMFS does not have jurisdiction over the activities of individuals conducting field studies in other nations' waters, and cumulative effects from all scientific research on these species across the Proposed Action area cannot be fully assessed. However, where possible, NMFS attempts to collaborate with foreign governments to address management and conservation of these trans-boundary ESA-listed species.

Summary of Cumulative Effects

There may already be significant adverse impacts on marine mammals from the existing levels of human activities. However, the relative incremental effect of the proposed action would not be significant. The proposed takes of specified numbers of marine mammals by harassment during the life of the permit are not likely to contribute to collectively significant adverse impacts on marine mammal stocks or species, including those listed as threatened or endangered. The effects of the takes would be transitory and recoverable, associated with only minor and short-term changes in the behavior of a limited number of individual marine mammals.

Although the effects of repeated or chronic disturbance from scientific research activities should not be dismissed, the potential long-term benefits and value of information gained on these species also must be considered. The proposed research would provide valuable information on these species' biology and ecology that in turn may be used to improve their management and reduce the effects of human activities on these populations.

5.0 MITIGATION MEASURES

There are no additional mitigation measures beyond those that are part of the applicant's protocols or conditions that would be required by permit, as discussed in the description of the Proposed Permit Alternative. The applicant's protocols are incorporated into the permit by reference.

In summary, the permit conditions limit the level of take as described in the take table (see Appendix C) and require notification, coordination, monitoring, and reporting. Although injury and mortality are not expected, if they occur due to authorized the authorized actions, the permit contains measures requiring researchers to cease activities until protocols have been reviewed and revised with NMFS.

Review of monitoring reports of previous permits for the same or similar research protocols indicate that these types of mitigation measures are effective at minimizing stress, pain, injury, and mortality associated with takes.

6.0 LIST OF PREPARERS AND AGENCIES CONSULTED

Agencies Consulted
Marine Mammal Commission
NOS National Marine Sanctuaries Program

Prepared By
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Appendix A: Recent Environmental Assessments for Marine Mammal Research Permits

NMFS Permits Division has prepared EAs with Findings of No Significant Impact (FONSI) for issuance of permits to conduct research on the listed and proposed for listing species, as well as for issuance of permits to conduct tagging studies on numerous species of marine mammals. Those EAs were prepared to take a closer look at potential environmental impacts of permitted research on marine mammals listed as threatened or endangered, and not because the Permits Division determined that significant adverse environmental impacts were expected or that a categorical exclusion was not applicable. As each EA demonstrates, and each FONSI has documented, research on marine mammals generally does not have a potential for significant adverse impacts on marine mammal populations or any other component of the environment.

Dr. Baird has been authorized to conduct similar research since 1997 under Permit Nos. 926, 731-1509, and the most recent, 731-1774, which expires August 31, 2011. The issuance of these permits and subsequent amendments have been analyzed under numerous NEPA documents.

The NEPA documents that contain analyses relevant to the proposed action include:

- *Environmental Assessment on the Effects of the Issuance of Eleven National Marine Fisheries Service Permitted Scientific Research Activities on Marine Mammal and Sea Turtle Species in the U.S. Territorial Waters and High Seas of the North Pacific Ocean (including the Gulf of Alaska and Bering Sea), Arctic Ocean (including the Chukchi Sea and Beaufort Sea), Southern Ocean (including waters off Antarctica), and Foreign Territorial Waters of Mexico (Gulf of California only), Canada, Russia, Japan and the Philippines* (NMFS, 2004).

  This was a batched EA which analyzed the issuance of 11 research permits. The objective of the various permits was to collect information on the biology, foraging ecology, behavior, and communication of a variety of marine mammal and sea turtle species in the action area, with a focus on humpback whales in the North Pacific. This EA described and analyzed the effects of research activities ranging from close approaches during aerial and vessel surveys for photo-identification to biopsy sampling and acoustic playbacks. Four alternatives were proposed: 1) no action; 2) authorizing the proposed activities except invasive sampling; 3) authorize all the proposed activities; and 4) retraction of all permits and no further issuance of permit requests. All but alternative 3 were found to be unsuitable because they would fail to provide critical information on the ecology and biology of marine mammals that would help conserve, manage, and recover these species. A FONSI was signed June 30, 2004 based on the best available information suggesting that careful approaches to cetaceans, even repeated approaches, elicit only moderate to minimal reactions, and that most animals show no observable change in behavior in response to biopsy sampling or tagging.

- *Supplemental Environmental Assessment on the Effects of the Issuance of Nine National Marine Fisheries Service Permit Actions for Scientific Research Activities on Marine Mammal Species in the U.S. Territorial Waters and High Seas of the Eastern, Central, and Western North Pacific Ocean, with a Primary Focus on the Waters Off Hawaii and*

from California Northward to Southeast Alaska (Including Gulf of Alaska and Aleutian Islands), and Including Foreign Territorial Waters of Japan (NMFS, 2005).

For issuance of File No. 731-1774 and 8 other permits, an SEA was prepared that analyzed the effects of increased action and cumulative impacts of research on primarily humpbacks, blue, sei, and fin whales in the Pacific basin. These requests cover a subset of the same research methodologies, target species and action area analyzed under the original EA as detailed above. Therefore, the original EA was supplemented to address the direct impacts of the newly requested permit actions as well as the cumulative impacts of the amendment and the initially permitted activities. It concluded that no significant cumulative effect of the requests were expected. A FONSI was signed September 16, 2005.

- *Environmental Assessment on the Effects of the Issuance of Four National Marine Fisheries Service Scientific Research Permits and Three Permit Amendments on the Eastern North Pacific Southern Resident Killer Whale (Orcinus orca) and Other Marine Mammals in the U.S. Territorial Waters, Exclusive Economic Zones, and High Seas of the Eastern North Pacific Ocean along the Coast of the U.S. from Southeastern Alaska to Central California, and Coastal Inlets and Estuaries of These States* (NMFS, 2006)

  The EA was prepared for issuance of several permits and amendments for research directed at Southern Resident killer whales, and including research on non-ESA listed killer whales and various other marine mammals. The research protocols analyzed included tagging of listed species. A FONSI was signed on March 30, 2006.

- *Environmental Assessment on the Effects of the Issuance of a Scientific Research Permit [File No. 14097] for Pinniped, Cetacean, and Sea Turtle Studies* (NMFS, 2010).

  For issuance of File No. 14097, an EA was prepared. The objectives of the study are to conduct population assessments to determine abundance, distribution patterns, foraging ecology, behavior, and communication for most marine mammal and sea turtle species in U.S. territorial and international waters. Research would be conducted through vessel surveys, aerial surveys, photogrammetry, photo-identification, biological sampling, radio tagging, and satellite tagging. Cetacean, pinniped, and sea turtle parts, specimens, and biological samples would also be salvaged and imported/exported. This EA described and analyzed the effects of research activities ranging from close approaches during aerial and vessel surveys for photo-identification to biopsy sampling and acoustic playbacks. Two alternatives were proposed: 1) no action and 2) authorize all the proposed activities; one was found to be unsuitable because they would fail to provide critical information on the ecology and biology of marine mammals that would help conserve, manage, and recover these species. A FONSI was signed July 01, 2010 based on the best available information suggesting that the proposed permit actions elicit only moderate to minimal reactions, that most animals show no observable change in behavior in response to biopsy sampling or tagging and no long term impact or reduction in fecundity are expected.

- *Environmental Assessment for The Issuance of Scientific Research Permits for Research on Humpback Whales and Other Cetaceans* (NMFS, 2010)

  The objective of the eight permits is to collect information on the biology, foraging ecology, behavior, and communication of a variety of marine mammal species in the Pacific Ocean, with a focus on humpback whales. This EA described and analyzed the effects of aerial surveys, vessel surveys for behavioral observations, photo-identification, underwater photography and videography, collection of sloughed skin and feces, sampling whale blows, passive acoustic recordings, export and re-import of parts, tags attached by suction cup or by implanting darts, barbs, or a portion of the tag into the skin and blubber, biopsy sample collection, and acoustic playbacks. A FONSI was signed July 14, 2010 based on the best available information suggesting that the proposed permit actions elicit only moderate to minimal reactions, that most animals show no observable change in behavior in response to biopsy sampling or tagging and no long term impact or reduction in fecundity are expected.

NMFS also prepared an Environmental Impact Statement (EIS) on the Steller Sea Lion and Northern Fur Seal Research Program (NMFS, 2007). The EIS describes the suite of research activities historically and currently permitted on Steller sea lions throughout their range in the U.S.

Appendix B : Active Scientific Research Permits In the Action Area

Permit No.	Permit Holder	Expiration date	Location	Harassment
Cetaceans Permits				
369-1757-01*	Mate	5/31/2011	AK, WA,OR, CA	Level A & B
532-1822-02*	Balcomb	4/14/2012	AK, WA,OR, CA	Level B only
540-1811-03*	Calambokidis	4/14/2012	WA,OR, CA	Level A & B
587-1767-01	Salden	9/30/2012	HI, AK	Level B only
727-1915	Scripps Institute of Oceanography	2/1/2013	WA, OR, CA, HI	Level A & B
781-1824-01*	NMFS, NWFSC	4/14/2012	AK, WA, OR, CA	Level A & B
945-1776*	Glacier Bay National Park and Preserve	11/30/2011	AK	Level B only
1058-1733-01	Baumgartner	5/31/2012	AK	Level A & B
1071-1770-02*	The Dolphin Institute	6/30/2011	AK, WA, OR, CA , HI	Level A & B
1120-1898	Eye of the Whale	7/31/2012	AK	Level B only
1127-1921	Hawaii Marine Mammal Consortium	6/30/2013	HI	Level A & B
10018	Cartwright	6/30/2013	HI	Level B only
10045	Wasser	7/15/2013	WA	Level B only

Permit No.	Permit Holder	Expiration date	Location	Harassment
13392	Jefferson	8/1/2013	CA	Level A & B
13430	NMFS NMML	1/31/2015	OR, WA	Level A & B
13846	Whale Trust/Darling	7/31/2015	AK, WA, HI	Level A & B
14097	NMFS, SWFSC	6/30/2015	AK, WA, OR, CA , HI	Level A & B
14122	Straley	7/31/2015	AK	Level A & B
14245	NMFS, NMML	5/1/2016	AK, WA, OR, CA	Level A & B
14296	Witteveen	7/31/2015	AK	Level A & B
14353	Zoidis	7/31/2015	HI	Level A & B
14451	University of Hawaii at Manoa	7/31/2015	AK, WA, OR, CA , HI, CNMI	Level B only
14534	NOAA S&T	7/31/2015	CA	Level A & B
14585	Pack	7/31/2015	AK, HI	Level A & B
14599	Sharpe	7/31/2015	AK	Level A & B
14682	Au	11/15/2015	HI	Level A & B
15271	Harvey	3/31/2016	WA, OR, CA	Level A & B
15483	Mate	12/31/2015	OR	Level B only
15616	Matkin	2/28/2016	AK	Level A & B

Permit No.	Permit Holder	Expiration date	Location	Harassment
16183	Maldini	2/29/2016	CA	Level B only
Pinniped Permits				
87-1851	Costa	1/31/2012	CA	Level A & B
373-1868	Point Reyes Bird Observatory	4/15/2012	CA	Level A & B
486-1790	Stewart	10/1/2011	CA	Level A & B
555-1870	Harvey	4/15/2012	AK, WA, OR, CA	Level A & B
782-1812-01	NMFS NMML	4/30/2011	WA, OR, CA	Level A & B
1070-1783	Western Washington University	3/31/2011	WA	Level B only
10137	PIFSC	6/30/2014	HI	Level A & B
14197	Vandenberg Airforce Base	6/30/2014	CA	Level A & B
14324	Alaska SeaLife Center	8/31/2014	AK	Level A & B
14325	Alaska DFG	8/31/2014	AK	Level A & B
14326	NMFS NMML	8/31/2014	AK, WA, OR, CA	Level A & B
14327	NMFS National Marine Mammal Laboratory (NMML)	8/31/2014	AK, CA	Level A & B
14328	Alaska SeaLife Center	8/31/2014	AK	Level A & B
14329	North Pacific Universities Marine Mammal Research Consortium	8/31/2014	AK	Level A & B

Permit No.	Permit Holder	Expiration date	Location	Harassment
14330	Aleut Community of St. Paul Island	8/31/2014	AK	Level A & B
14331	Aleut Community of St. George Island	8/31/2014	AK	Level A & B
14335	Alaska SeaLife Center	8/31/2014	AK	Level A & B
14336	Markus Horning	8/31/2014	AK	Level A & B
14337	Andrew Trites, Ph.d.	8/31/2014	AK	Level A & B
14636	Costa	6/30/2015	CA	Level A & B
14676	Ponganis	2/01/2015	CA	Level A & B

* indicates that there is a one-year extension on the permit

Appendix C: Tables Specifying the Kind(s) of Protected Species, Location(s), and Manner of Taking

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Dolphin, bottlenose	Range-wide	Adult/ Juvenile	90	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Other= Physio-tag, up to 30 per year, Up to 30 Dart/barb tags and up to 30 suction cup tags will be applied, additional takes include misses and unsuccessful attempts;Up to 6 could be tagged with both dart and suction cup tags.
Dolphin, bottlenose	Range-wide	All	3000	20	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Dolphin, common, long-beaked	Range-wide	Adult/ Juvenile	30	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 30 suction cup tagging takes includes misses and unsuccessful attempts
Dolphin, common, long-beaked	Range-wide	All	6000	10	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Dolphin, common, short-beaked	Range-wide	Adult/ Juvenile	30	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 30 suction cup tagging takes includes misses and unsuccessful attempts
Dolphin, common, short-beaked	Range-wide	All	6000	10	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Dolphin, Fraser's	Range-wide	Adult/ Juvenile	50	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 20 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts. Up to 6 animals could be tagged with both dart and suction cup tags.
Dolphin, Fraser's	Range-wide	All	6000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Dolphin, Indian Ocean bottlenose	Range-wide	Adult/ Juvenile	30	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 30 suction cup tagging takes includes misses and unsuccessful attempts
Dolphin, Indian Ocean bottlenose	Range-wide	All	6000	10	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Dolphin, northern right whale	Range-wide	Adult/ Juvenile	30	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 30 suction cup tagging takes includes misses and unsuccessful attempts
Dolphin, northern right whale	Range-wide	All	6000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Dolphin, Pacific white-sided	Range-wide	Adult/ Juvenile	50	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 20 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts.Up to 6 animals could be tagged with both dart and suction cup tags.
Dolphin, Pacific white-sided	Range-wide	All	6000	10	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Dolphin, spinner	Range-wide	Adult/ Juvenile	30	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 30 suction cup tagging takes includes misses and unsuccessful attempts
Dolphin, spinner	Range-wide	All	6000	20	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Dolphin, pantropical spotted	Range-wide	Adult/ Juvenile	60	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 30 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts.Up to 6 animals could be tagged with both dart and suction cup tags.
Dolphin, pantropical spotted	Range-wide	All	6000	40	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Dolphin, Risso's	Range-wide	Adult/ Juvenile	80	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Other = Physio tag. Up to 20 Physio-tags, up to 30 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts.Up to 6 animals could be tagged with both dart and suction cup tags.
Dolphin, Risso's	Range-wide	All	6000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Porpoise, harbor	Range-wide	All	6000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photograph/Video	
Porpoise, Dall's	Range-wide	Adult/ Juvenile	30	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 30 suction cup tagging takes includes misses and unsuccessful attempts
Porpoise, Dall's	Range-wide	All	6000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Dolphin, rough-toothed	Range-wide	Adult/ Juvenile	80	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Other = Physio tag. Up to 20 Physio-tags, up to 30 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts. Up to 6 animals could be tagged with both dart and suction cup tags.

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Dolphin, rough-toothed	Range-wide	All	6000	20	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Dolphin, striped	Range-wide	Adult/ Juvenile	60	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 30 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts. Up to 6 animals could be tagged with both dart and suction cup tags.
Dolphin, striped	Range-wide	All	6000	10	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, Baird's beaked	Range-wide	Adult/ Juvenile	90	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Other= Physio-tag, up to 30 per year, Up to 30 Dart/barb tags and up to 30 suction cup tags will be applied, additional takes include misses and unsuccessful attempts; Up to 6 animals could be tagged with both dart and suction cup tags.

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Whale, Baird's beaked	Range-wide	All	3000	10	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, beluga	Range-wide	All	500	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Count/survey; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photograph/Video	Does not include Cook Inlet Beluga DPS
Whale, Blainville's beaked	Range-wide	Adult/ Juvenile	80	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Other = Physio tag. Up to 20 Physio-tags, up to 30 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts.Up to 6 animals could be tagged with both dart and suction cup tags.
Whale, Blainville's beaked	Range-wide	All	6000	10	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, Cuvier's beaked	Range-wide	Adult/ Juvenile	80	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Other = Physio tag. Up to 20 Physio-tags, up to 30 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts.Up to 6 animals could be tagged with both dart and suction cup tags.

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Whale, Cuvier's beaked	Range-wide	All	6000	10	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, dwarf sperm	Range-wide	Adult/ Juvenile	90	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Other= Physio-tag, up to 30 per year, Up to 30 Dart/barb tags and up to 30 suction cup tags will be applied, additional takes include misses and unsuccessful attempts; Up to 6 animals could be tagged with both dart and suction cup tags.
Whale, dwarf sperm	Range-wide	All	3000	10	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, false killer	Range-wide	Adult/ Juvenile	35	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Other = Physio tag. Up to 20 Physio-tags, up to 5 dart/barb tagging takes and 10 suction cup tagging takes includes misses and unsuccessful attempts. .Up to 10 animals could be tagged with both dart and suction cup tags. Excludes Hawaiian DPS

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Whale, false killer	Range-wide	All	3000	20	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Excludes Hawaiian DPS
Whale, false killer	Hawaiian Stock	Adult/ Juvenile	65	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Other = Physio tag. Up to 10 Physio-tags, up to 35 dart/barb tagging takes and 20 suction cup tagging takes includes misses and unsuccessful attempts.Up to 6 animals could be tagged with both dart and suction cup tags.
Whale, false killer	Hawaiian Stock	All	3000	20	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, ginkgo-toothed beaked	Range-wide	Adult/ Juvenile	80	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Other = Physio tag. Up to 20 Physio-tags, up to 30 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts. Up to 6 animals could be tagged with both dart and suction cup tags.

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Whale, ginkgo-toothed beaked	Range-wide	All	6000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, Hubbs' beaked	Range-wide	Adult/ Juvenile	90	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Other= Physio-tag, up to 30 per year, Up to 30 Dart/barb tags and up to 30 suction cup tags will be applied, additional takes include misses and unsuccessful attempts; Up to 6 animals could be tagged with both dart and suction cup tags.
Whale, Hubbs' beaked	Range-wide	All	3000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, killer	Eastern North Pacific Southern Resident Stock (NMFS Endangered)	Adult/ Juvenile	30	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Incidental harassment; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal	up to 30 suction cup tagging takes includes misses and unsuccessful attempts
Whale, killer	Eastern North Pacific Southern Resident Stock (NMFS Endangered)	All	1000	20	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal	

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Whale, killer	Range-wide	Adult/ Juvenile	80	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Excluding SRKW. Other = Physio tag. Up to 20 Physio-tags, up to 30 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts.Up to 6 animals could be tagged with both dart and suction cup tags.
Whale, killer	Range-wide	All	6000	20	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Excluding SRKW
Whale, Longman's beaked	Range-wide	Adult/ Juvenile	90	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Other= Physio-tag, up to 30 per year, Up to 30 Dart/barb tags and up to 30 suction cup tags will be applied, additional takes include misses and unsuccessful attempts; Up to 6 animals could be tagged with both dart and suction cup tags.
Whale, Longman's beaked	Range-wide	All	3000	10	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Whale, melon-headed	Range-wide	Adult/ Juvenile	100	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Other = Physio tag. Up to 20 Physio-tags, up to 50 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts.Up to 10 animals could be tagged with both dart and suction cup tags.
Whale, melon-headed	Range-wide	All	6000	20	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, pilot, short-finned	Range-wide	Adult/ Juvenile	100	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Other = Physio tag. Up to 20 Physio-tags, up to 50 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts.Up to 10 animals could be tagged with both dart and suction cup tags.
Whale, pilot, short-finned	Range-wide	All	6000	40	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Whale, pygmy killer	Range-wide	Adult/ Juvenile	70	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Other = Physio tag. Up to 10 Physio-tags, up to 30 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts. Up to 6 animals could be tagged with both dart and suction cup tags.
Whale, pygmy killer	Range-wide	All	1000	20	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, pygmy sperm	Range-wide	Adult/ Juvenile	30	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Other= Physio-tag, up to 10 per year, Up to 10 Dart/barb tags and up to 10 suction cup tags will be applied, additional takes include misses and unsuccessful attempts; Up to 6 animals could be tagged with both dart and suction cup tags.
Whale, pygmy sperm	Range-wide	All	500	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Whale, unidentified Mesoplodon	NA	Adult/ Juvenile	70	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Other = Physio tag. Up to 10 Physio-tags, up to 30 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts. Up to 6 animals could be tagged with both dart and suction cup tags.
Whale, unidentified Mesoplodon	NA	All	1000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, Perrin's beaked	Range-wide	Adult/ Juvenile	30	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Other; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	Other= Physio-tag, up to 10 per year, Up to 10 Dart/barb tags and up to 10 suction cup tags will be applied, additional takes include misses and unsuccessful attempts; Up to 6 animals could be tagged with both dart and suction cup tags.
Whale, Perrin's beaked	Range-wide	All	500	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Whale, gray	Eastern North Pacific	Adult/ Juvenile	30	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 30 suction cup tagging takes includes misses and unsuccessful attempts
Whale, gray	Eastern North Pacific	All	6000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, blue	Range-wide (NMFS Endangered)	Adult/ Juvenile	20	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 10 dart/barb tagging takes and 10 suction cup tagging takes includes misses and unsuccessful attempts. Up to 2 animals could be tagged with both dart and suction cup tags.
Whale, blue	Range-wide (NMFS Endangered)	All	1000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Whale, fin	Range-wide (NMFS Endangered)	Adult/ Juvenile	20	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 10 dart/barb tagging takes and 10 suction cup tagging takes includes misses and unsuccessful attempts.Up to 2 animals could be tagged with both dart and suction cup tags.
Whale, fin	Range-wide (NMFS Endangered)	All	1000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, Bryde's	Range-wide	Adult/ Juvenile	20	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 10 dart/barb tagging takes and 10 suction cup tagging takes includes misses and unsuccessful attempts. Up to 2 animals could be tagged with both dart and suction cup tags.
Whale, Bryde's	Range-wide	All	1000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Whale, humpback	Range-wide (NMFS Endangered)	Adult/ Juvenile	60	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 30 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts. Up to 6 animals could be tagged with both dart and suction cup tags.
Whale, humpback	Range-wide (NMFS Endangered)	All	1000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, right, North Pacific	Range-wide (NMFS Endangered)	All	20	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, sloughed skin; Count/survey; Incidental harassment; Photo-id; Photograph/Video	
Whale, minke	Range-wide	Adult/ Juvenile	60	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 30 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts. Up to 6 animals could be tagged with both dart and suction cup tags.
Whale, minke	Range-wide	All	1000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Whale, pygmy beaked	Range-wide	Adult/ Juvenile	60	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 30 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts. Up to 6 animals could be tagged with both dart and suction cup tags.
Whale, pygmy beaked	Range-wide	All	1000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, sei	Range-wide (NMFS Endangered)	Adult/ Juvenile	60	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 30 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts. Up to 6 animals could be tagged with both dart and suction cup tags.
Whale, sei	Range-wide (NMFS Endangered)	All	1000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, sperm	Range-wide (NMFS Endangered)	Adult/ Juvenile	60	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 30 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts.Up to 6 animals could be tagged with both dart and suction cup tags.

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Whale, sperm	Range-wide (NMFS Endangered)	All	1000	10	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, unidentified baleen	NA	All	1000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, unidentified beaked	NA	Adult/ Juvenile	60	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 30 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts. Up to 6 animals could be tagged with both dart and suction cup tags.
Whale, unidentified beaked	NA	All	1000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, Stejneger's beaked	Range-wide	Adult/ Juvenile	60	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	up to 30 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts. Up to 6 animals could be tagged with both dart and suction cup tags.

SPECIES	LISTING UNIT/STOCK	LIFESTAGE	NUMBER OF TAKES	TAKES PER INDIVIDAL	OBSERVE/ COLLECT METHOD	PROCEDURES	DETAILS
Whale, Stejneger's beaked	Range-wide	All	1000	4	Survey, aerial/vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Import/export/receive, parts; Incidental harassment; Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Underwater photo/videography	
Whale, unidentified baleen	NA	Adult/ Juvenile	60	4	Survey, vessel	Acoustic, passive recording; Collect, remains for predation study; Collect, sloughed skin; Count/survey; Imaging, thermal; Incidental harassment; Instrument, dart/barb tag; Instrument, suction-cup (e.g., VHF, TDR); Observation, monitoring; Observations, behavioral; Photo-id; Photogrammetry; Photograph/Video; Sample, exhaled air; Sample, fecal ; Sample, skin and blubber biopsy; Underwater photo/videography	up to 30 dart/barb tagging takes and 30 suction cup tagging takes includes misses and unsuccessful attempts. Up to 6 animals could be tagged with both dart and suction cup tags.
Sea lion, California	Range-wide	All	6000	4	Survey, aerial/vessel	Incidental disturbance	
Sea lion, Steller	Range-wide	All	3000	4	Survey, aerial/vessel	Incidental disturbance	eastern stock
Sea lion, Steller	Range-wide	All	3000	4	Survey, aerial/vessel	Incidental disturbance	western stock
Seal, Guadalupe fur	Range-wide	All	100	4	Survey, aerial/vessel	Incidental disturbance	
Seal, harbor	Range-wide	All	6000	4	Survey, aerial/vessel	Incidental disturbance	
Seal, Hawaiian monk	Hawaiian Islands (NMFS Endangered)	All	20	4	Survey, aerial/vessel	Incidental disturbance	
Seal, northern elephant	Range-wide	All	6000	4	Survey, aerial/vessel	Incidental disturbance	
Seal, Northern fur	Range-wide	All	6000	4	Survey, aerial/vessel	Incidental disturbance	

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

Finding of No Significant Impact
Issuance of Scientific Research Permit No. 15330 for Cetacean Research

Background

In May 2010, the National Marine Fisheries Service (NMFS) received an application for a permit (File No. 15330) from Robin Baird, Ph.D. to conduct research on marine mammals in the North Pacific Ocean. In accordance with the National Environmental Policy Act, NMFS has prepared an Environmental Assessment (EA) analyzing the impacts on the human environment associated with permit issuance (Environmental Assessment For Issuance of a Scientific Research Permit for Cetacean Studies, June 2011). In addition, a Biological Opinion was issued under the Endangered Species Act (July 6, 2011) summarizing the results of an intra-agency consultation. The analyses in the EA, as informed by the Biological Opinion, support the below findings and determination.

Analysis

National Oceanic and Atmospheric Administration Administrative Order (NAO) 216-6 (May 20, 1999) contains criteria for determining the significance of the impacts of a proposed action. In addition, the Council on Environmental Quality (CEQ) regulations at 40 C.F.R. 1508.27 state that the significance of an action should be analyzed both in terms of "context" and "intensity." Each criterion listed below is relevant to making a finding of no significant impact and has been considered individually, as well as in combination with the others. The significance of this action is analyzed based on the NAO 216-6 criteria and CEQ's context and intensity criteria. These include:

1) Can the proposed action reasonably be expected to cause substantial damage to the ocean and coastal habitats and/or essential fish habitat as defined under the Magnuson-Stevens Act and identified in Fishery Management Plans?

Response: Although Essential Fish Habitat (EFH) may be present in the action area, the Proposed Action would only affect marine mammals authorized for research or incidental harassment by the permit. Research would involve routine vessel and aerial surveys, photo-identification, acoustic recording, breath sampling, and tagging. The proposed action would not be expected to cause damage to other aspects of ocean and coastal habitat such as reefs, seagrass beds, soft-bottom sediment, etc. Therefore, no EFH consultation was required.

2) Can the proposed action be expected to have a substantial impact on biodiversity and/or ecosystem function within the affected area (e.g., benthic productivity, predator-prey relationships, etc.)?

Response: The effects of the action on target species, including Endangered Species Act (ESA) listed species, their habitat, EFH, marine sanctuaries, and other

marine mammals were considered. The proposed action would result in short-term minimal disturbance to individual marine mammals. The research is not expected to affect an animal's susceptibility to predation, alter dietary preferences or foraging behavior, or change distribution or abundance of predators or prey. Therefore, the proposed action is not expected to have a substantial impact on biodiversity or ecosystem function.

3) Can the proposed action reasonably be expected to have a substantial adverse impact on public health or safety?

Response: The research activities would be conducted by trained personnel in a safe manner. Research would be conducted by or under the close supervision of experienced personnel, as required by the permit. These activities would not involve hazardous methods, toxic agents or pathogens, or other materials that would have a substantial adverse impact on public health and safety. Therefore, no negative impacts on human health or safety are anticipated during the proposed activities.

4) Can the proposed action reasonably be expected to adversely affect endangered or threatened species, their critical habitat, marine mammals, or other non-target species?

Response: As determined in the 2011 ESA biological opinion prepared for the request, the proposed action would affect listed pinnipeds and cetaceans in the action area during research. However, the biological opinion concluded that the effects of the proposed action would be short-term in nature and confined to individual animals. The proposed action would not likely jeopardize the continued existence of any ESA-listed species and would not likely destroy or adversely modify designated critical habitat. Some research under Permit No. 15330 would take place in designated critical habitat for multiple ESA species; however, none of the research activities would affect the identified constituent elements of these habitats. Therefore research is not expected to negatively affect critical habitat. The proposed action would also affect several non-listed species. Researchers may harass individual animals during vessel- and aerial-based activities. No non-target species would be intentionally approached during proposed research. Further, the permit would contain mitigation measures to minimize the effects of the research and to avoid unnecessary stress to any protected species by requiring use of specific research protocols.

5) Are significant social or economic impacts interrelated with natural or physical environmental effects?

Response: Effects of the research would be limited to the take of target and non-target marine mammals. Permitting the proposed research could result in a low level of economic benefit to local economies in the action area. However, such impacts would be negligible on a national or regional level and therefore are not considered significant. These impacts are not interrelated with any natural or physical impacts. The proposed action would not result in inequitable distributions of environmental burdens or affect access (short- or long-term use) to any natural or depletable resources in the action area.

6) Are the effects on the quality of the human environment likely to be highly controversial?

Response: NMFS does not consider the environmental effects of the proposed action to be controversial nor has it been considered controversial in the past. All of the proposed research activities are standard research activities that have been conducted on these species by the scientific community, and by the applicant, for decades. No other portion of the marine environment beyond the target and non-target species authorized by the permit would be impacted by the proposed action. The application and draft EA were made available for public comment and no substantive comments were received.

7) Can the proposed action reasonably be expected to result in substantial impacts to unique areas, such as historic or cultural resources, park land, prime farmlands, wetlands, wild and scenic rivers, essential fish habitat, or ecologically critical areas?

Response: The proposed research would not be expected to result in substantial impacts to any such area. The majority of these habitats are not part of the action area. See response to question #1 for impacts to EFH.

8) Are the effects on the human environment likely to be highly uncertain or involve unique or unknown risks?

Response: The proposed research is not unique. The proposed activities have been previously authorized as research activities for cetaceans for decades. The potential for harassment and mortality from the activities to the target and non-target marine mammals is known and has been considered. Risks to other portions of the human environment as a result of the research activities are not expected. Therefore, the risks to the human environment are not unique or unknown.

9) Is the proposed action related to other actions with individually insignificant, but cumulatively significant impacts?

Response: The proposed action is not related to other actions with individually insignificant, but cumulatively significant impacts. While these species are impacted by other human activities, including other scientific research, these activities are not occurring simultaneously on the same individuals of a population/stock. The short-term stresses (separately and cumulatively when added to other stresses marine mammals face in the environment) resulting from the research activities would be expected to be minimal. Behavioral reactions suggest that the effects of harassment are brief, lasting minutes, before animals resume normal behaviors. Hence, NMFS expects the effects of research to live animals to dissipate before animals could be harassed by other human activities; nor will it result in an appreciable reduction in the fecundity of target individuals. Therefore, significant cumulative impacts are not expected. Furthermore, the permit would contain conditions to mitigate and minimize any impacts to the animals from research activities, including the coordination of activities with other researchers in the area.

10) Is the proposed action likely to adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural or historical resources?

Response: The action would not take place in any district, site, highway, structure, or object listed in or eligible for listing in the National Register of Historic Places, thus none would be impacted. See Response #4 for critical habitat. Research may occur in National Marine Sanctuaries. Although NMFS does not expect impacts to Sanctuary resources, the National Marine Sanctuary Program (NMSP) was provided an opportunity to review the applicant's request. The NMSP requested PR1 advise the applicant that a multi-sanctuary and monument permit may be required for research conducted in those waters. The applicant was informed of this and confirmed he will be applying for the necessary permits as required by the National Marine Sanctuary Program. The proposed action would not occur in other areas of significant scientific, cultural or historical resources and thus would not cause their loss or destruction. None of these resources are expected to be directly or indirectly impacted.

11) Can the proposed action reasonably be expected to result in the introduction or spread of a non-indigenous species?

Response: The action would not be removing or introducing any species; therefore, it would not likely result in the introduction or spread of a non-indigenous species.

12) Is the proposed action likely to establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration?

Response: The decision to issue the permit would not be precedent setting and would not affect any future decisions. Issuance of a permit to a specific individual or organization for a given research activity does not in any way guarantee or imply that NMFS will authorize other individuals or organizations to conduct the same research activity. Any future request received would be evaluated upon its own merits relative to the criteria established in the MMPA, ESA, and NMFS' implementing regulations.

13) Can the proposed action reasonably be expected to threaten a violation of Federal, State, or local law or requirements imposed for the protection of the environment?

Response: The action would not result in any violation of Federal, State, or local laws for environmental protection. The permit would contain language stating that the Holder is required to obtain any state and local permits necessary to carry out the action. The applicant has been made aware that other permits such as from the NMSP may be needed to conduct the work.

14) Can the proposed action reasonably be expected to result in cumulative adverse effects that could have a substantial effect on the target species or non-target species?

Response: The action is not expected to result in any cumulative adverse effects to the species that are the subject of the proposed research or non-target species found in these waters. For targeted species, the proposed action would not be expected to have more than short-term effects to individuals. These impacts are expected to be negligible to marine mammal stocks and species. The effects on non-target species were also considered and no substantial effects are expected as researchers would make no efforts to approach or interact with them. Therefore, no cumulative adverse effects that could have a substantial effect on any species, target or non-target, would be expected.

DETERMINATION

In view of the information presented in this document and the analysis contained in the EA prepared for Issuance of Permit No. 15330, pursuant to the ESA and MMPA, and the ESA section 7 biological opinion, it is hereby determined that the issuance of Permit No. 15330 will not significantly impact the quality of the human environment as described above and in the EA. In addition, all beneficial and adverse impacts of the proposed action have been addressed to reach the conclusion of no significant impacts. Accordingly, preparation of an Environment Impact Statement for this action is not necessary.

James H. Lecky
Director, Office of Protected Resources

7/26/11
Date