

5. Mitigation

5.1 Introduction

The purpose of mitigation is to avoid, minimize, or eliminate negative impacts on the affected resources from a proposed action. Mitigation measures have been developed for alternatives where a significant impact would likely occur. Measures are described under each resource area and alternative, as necessary.

5.2 Biological Resources

5.2.1 Stranding Agreements and Response Alternatives

Under Alternatives A2, A3, A4, and A5, measures would be taken to avoid protected and sensitive habitats, where feasible. However, many strandings occur in protected areas, including: national parks, monuments, seashores, and forests; NMSs; NERRs; wilderness areas; fishery management areas; and state and local parks. When response activities must occur in these areas, the proper authorities would be contacted to coordinate the response activities, to determine the manner in which a response may occur (if it is permitted at all), and to minimize impacts of a response. In situations where EFH may be impacted by response activities, the appropriate NMFS EFH Coordinator would be contacted. Nesting sea turtles and birds would be avoided during responses, and response activities would be coordinated with the USFWS and/or appropriate state agency/agencies to ensure there would be no adverse impacts. Article II, Part C, Number 2 of the SA template requires stranding network participants to coordinate with Federal, state, and local officials and employees in matters supporting the purposes of their SA (see Appendix C). The SA template (Article III and Article IV, Part B, Number 4) would require SA holders to make every reasonable effort to assist in the clean-up of beach areas where activities such as necropsy or specimen collection were conducted, by removing trash and other debris, and disposing of or assisting in the disposal of offal and other waste parts from the carcass. NMFS would develop spill prevention best management practices for responders to use to reduce the incidence of spills from equipment, euthanasia solution, etc. These measures would help protect the surrounding biological resources, particularly when the response was conducted in a sensitive area.

Capture and restraint procedures would be performed or directly supervised by qualified personnel and if possible, an experienced marine mammal veterinarian would be present to carry out or provide direct on-site supervision of all activities involving the use of anesthesia and sedatives. Only

1 personnel experienced in capture and sampling techniques would be used to complete the activities as
2 quickly as possible. For pinnipeds, responders would carry out activities efficiently, such that the
3 total time they are occupying beach haul-out areas, and total number of times a site is disturbed, are
4 minimized. Response to stranded pinnipeds in a rookery situation would not be authorized under a
5 SA, but would only be performed under the authority of the MMHSRP ESA/MMPA permit in
6 coordination with the Permit Holder/PI. Experienced personnel would be used during capture and
7 restraint to complete the activities as quickly as possible.

8 To prevent interactions with Florida manatees or sea turtles during on-water capture activities, vessel
9 personnel would be informed that it is illegal to intentionally or unintentionally harm, harass, or
10 otherwise “take” manatees or sea turtles. Netting activities would cease if a manatee or sea turtle is
11 sighted in the vicinity of the vessel. If a manatee or sea turtle is accidentally captured, the vessel
12 would immediately be stopped and either turned off or put in neutral. Tension on the net would be
13 released to allow the animal the opportunity to free itself. Caution would be exercised when
14 attempting to assist the animal in freeing itself. The appropriate USFWS Field Office and NMFS
15 PR1 would be contacted immediately to report any incidents.

16 Tagging animals for immediate release would be performed or directly supervised by qualified
17 personnel. Pinniped flipper tags would be placed appropriately, so animals would not walk on or be
18 irritated by them. The tag and/or instrument size and weight would be kept to the minimum needed to
19 collect the desired data to minimize the potential for increased energetic costs of or behavioral
20 responses to larger tags. Tag placement would be selected so that it will not interfere significantly
21 with an animal’s ability to forage or conduct other vital functions.

22 Potential adverse impacts from euthanasia would be minimized by the measures described below.
23 Under Article IV, Part A, Number 1 of the SA template (Appendix C), euthanasia of animals would
24 only be performed by the attending veterinarian or by a person acting on behalf of the attending
25 veterinarian (*i.e.*, under direct coordination or supervision). Euthanasia procedures would follow
26 approved guidelines, such as those listed in the 2000 Report of the AVMA on Euthanasia (AVMA
27 2001) or the CRC Handbook of Marine Mammal Medicine (Greer *et. al* 2001). Persons using
28 controlled drugs would comply with all applicable Federal and state laws and regulations. This would
29 include DEA regulations and any applicable state veterinary practice laws and regulations. Stranding
30 network members would be authorized to euthanize ESA-listed species under the MMHSRP
31 ESA/MMPA permit. In addition to the previous measures, euthanasia of ESA-listed species would
32 require authorization and coordination with the appropriate NMFS regional stranding coordinator.

1 Potential impacts from the transport of animals to rehabilitation facilities could be minimized by
2 following the APHIS “Specifications for the Humane Handling, Care, Treatment, and Transportation
3 of Marine Mammals” (9 CFR Ch 1, Subpart E). If a commercial vehicle is used to transport an
4 animal, these standards should be complied with. The “Live Animal Regulations” published by the
5 International Air Transport Association (IATA) may also be used to minimize transport impacts
6 (IATA 2006). Both sets of standards have specifications for containers, food and water requirements,
7 methods of handling, and care during transit.

8 The Marine Mammal Oil Spill Response Guidelines (Appendix L) would be followed to prevent any
9 potential impacts during response. The guidelines include information on data collection and chain-
10 of-custody procedures. Stranding responders would work with the Federal On-Scene Coordinator
11 (FOSC) for oil spill response and consult with NMFS on appropriate response measures.

12 Potential impacts from hazing would be minimized by using visual observations during the use of all
13 acoustic deterrents. If a change in animal behavior is observed (other than moving away from the
14 sound), the acoustic deterrent source would be shutdown. Procedures for the use of acoustic
15 deterrents around ESA-listed species would be developed. Procedures for hazing killer whales are
16 currently being drafted. Airguns would not be used around mysticetes to minimize any potential
17 injuries. Seal bombs would not be used in the vicinity of an oil spill. Additional mitigation for
18 hazing threatened and endangered species may be included as conditions of the ESA/MMPA permit.

19 The MMHSRP would follow all mitigation measures for response to threatened and endangered
20 species set forth by NMFS PR1 as conditions of their ESA/MMPA permit.

21 **5.2.2 Carcass Disposal Alternatives**

22 Under Alternatives B2 and B3, stranding network members would contact and coordinate with
23 Federal, State, and/or local agencies prior to carcass disposal. Article II, Part C, Number 2 of the SA
24 template requires stranding network participants to coordinate with Federal, state, and local officials
25 and employees in matters supporting the purposes of their SA (see Appendix C). Beach burial and
26 disposal in State waters would only occur after state and/or local authorities have given permission to
27 conduct such activities. If necessary, stranding network members would obtain a permit to conduct
28 these disposal activities. Burial in shoreline areas may be restricted for the protection of sensitive
29 habitats, such as nesting shorebirds, vegetation, or dunes. Burial would not occur in wetland areas.
30 Carcasses may be buried in upland areas where body fluids would not likely leach into groundwater.

1 Burial would also be deep enough so that carcasses would not be dug up by scavengers or uncovered
2 by wave action.

3 If carcasses are known or assumed (based upon test results or prior knowledge of the species) to have
4 contaminant levels that meet or exceed the definition of hazardous waste under EPA, state, and/or
5 local regulations, they would be taken to an EPA-designated hazardous waste landfill for proper
6 disposal.

7 Non-toxic carcasses may be disposed in Federal waters without a permit. At-sea disposal of carcasses
8 that are known to be hazardous waste may require EPA approval and a permit. These carcasses
9 would be disposed of in an EPA designated ocean dumping site. All EPA dumping sites are managed
10 to avoid or minimize impacts to the marine environment. Materials used to sink carcasses would be
11 chosen to avoid or minimize any impacts to the marine environment.

12 During carcass disposal and removal activities, measures would be taken to avoid protected and
13 sensitive habitats. When these areas cannot be avoided, the proper authorities would be contacted to
14 coordinate the disposal activities and minimize impacts. In situations where EFH may be impacted
15 by response activities, the appropriate NMFS EFH Coordinator would be contacted. Activities would
16 also be coordinated with State and/or local agencies to avoid or minimize impacts to nesting sea
17 turtles or birds.

18 **5.2.3 Rehabilitation Activities Alternatives**

19 If NMFS selects Alternative A3 or A4 for SAs and response, it would implement the Final SA criteria
20 (Appendix C) as mitigation for Alternatives C3 and C4. Under the SA criteria (Part C, Number 3) the
21 rehabilitation facility should have and maintain an attending veterinarian experienced in marine
22 mammal care that would be willing to assume responsibility for diagnosis, treatment, and medical
23 clearance for release or transport of marine mammals in rehabilitation. Also, the attending
24 veterinarian should provide a schedule of veterinary care that includes a review of the husbandry
25 records; visual and physical examinations of all marine mammals in rehabilitation; and a periodic
26 visual inspection of the facilities, protocols, Standard Operating Procedures, and case records. All
27 documentation of the attending veterinarian's experience would be submitted to NMFS for review
28 prior to issuing an SA. Under Part C, Number 4 of the SA criteria the rehabilitation facility should
29 have sufficient physical and financial resources to maintain appropriate animal care. The stranding
30 network participant would have to submit a facility operation manual to NMFS for review prior to the
31 issuance of an SA. All operations would be consistent with NMFS and other applicable Federal and

1 State policies, guidelines, directives, regulations, and laws. Facilities would be reviewed by NMFS
2 for compliance with their SA every 3 years, and may be put on probation, suspended, or have their
3 SA terminated for any violations or non-compliance.

4 Veterinary medical care standards (Sections 1.7 [for cetaceans] and 2.7 [for pinnipeds] in the
5 standards) would ensure that veterinarians and other personnel have the appropriate knowledge and
6 experience to properly care for and treat marine mammals. Veterinarians must have: arrangements to
7 obtain and store medications required for the animals housed at the rehabilitation facility; access to a
8 list of expert veterinarians to contact for assistance; and a minimum skill level to treat species most
9 commonly encountered at the facility. Veterinary care would comply with any applicable state
10 veterinary practice laws and regulations for the state in which the facility is located. Examples of the
11 recommended standards for veterinarians include: completion of a course offering basic medical
12 training with marine mammals; one year of clinical experience working with the marine mammal(s)
13 most frequently admitted to the facility; one year of clinical veterinary experience post graduation;
14 and membership in the International Association for Aquatic Animal Medicine.

15 Potential adverse impacts under Alternative C3 and C4 from disease transmission would be
16 minimized by measures in the Rehabilitation Facility Standards. Under Section 1.4 (cetaceans) and
17 Section 2.4 (pinnipeds), quarantine facilities would be available and quarantine protocols would be in
18 place for all incoming animals. Minimum quarantine standards include, but are not limited to: having
19 separate filtration and water flow systems; providing sufficient space or solid barriers between animal
20 enclosures to prevent direct contact; and maintaining equipment and tools strictly dedicated to the
21 quarantine area. An evaluation and written veterinarian approval would be required before placing
22 animals together after the quarantine period has been met. Standards include measures to reduce the
23 spread of disease from open ocean/bay pens. Standards also include measures to prevent disease
24 transmission from domestic and wild terrestrial animals to marine mammals and vice versa. All
25 quarantine standards are described in Section 1.4 (for cetaceans) and Section 2.4 (for pinnipeds) of
26 the standards.

27 Handling and restraint procedures would be performed or directly supervised by qualified personnel
28 and if possible, an experienced marine mammal veterinarian would be present to carry out or provide
29 direct on-site supervision of all activities involving the use of anesthesia and sedatives. Only
30 personnel experienced in handling and sampling techniques would be used in order to complete the
31 activities as quickly as possible.

1 Potential adverse impacts from euthanasia under Alternative C3 and C4 would be minimized by the
2 measures described below. Under Article IV, Part A, Number 1 of the SA template (Appendix C)
3 and Section 9.0 of the Rehabilitation Facility Standards, euthanasia of animals would only be
4 performed by the attending veterinarian or by a person acting on behalf of the attending veterinarian
5 (*i.e.*, under direct authorization or supervision). Persons administering the euthanasia should be
6 knowledgeable and trained to perform the procedure, and competent in the performance of the
7 technique. Each facility would have a written euthanasia protocol signed and periodically reviewed
8 by the attending veterinarian. Euthanasia procedures would follow approved guidelines, such as
9 those listed in the 2000 Report of the AVMA on Euthanasia (AVMA 2001) or the CRC Handbook on
10 Marine Mammal Medicine (Greer *et. al* 2001). Persons using controlled drugs would comply with all
11 applicable Federal and state laws and regulations. This would include DEA regulations and any
12 applicable state veterinary practice laws and regulations. In addition to the measures listed above,
13 rehabilitation personnel would require further authorization to euthanize ESA-listed species under the
14 MMHSRP ESA/MMPA permit. Euthanasia of ESA-listed species would require authorization and
15 coordination with the appropriate NMFS regional stranding coordinator.

16 The Marine Mammal Oil Spill Response Guidelines (Appendix L) would be followed to ensure that
17 rehabilitation facilities that accept oiled animals are properly equipped to handle their care. The
18 guidelines specify housing requirements and considerations, including ventilation, quarantine, water
19 supply, and waste water. The guidelines include information on data collection and chain-of-custody
20 procedures. Rehabilitation facilities would work with the FOSC for oil spill response and consult
21 with NMFS on appropriate rehabilitation measures.

22 **5.2.4 Release of Rehabilitated Animals Alternatives**

23 If NMFS selects Alternative A3 or A4 for SAs and response, it would implement the Final SA criteria
24 (Appendix C) as mitigation for Alternative D3. Under the SA criteria (Part C, Number 3) the
25 rehabilitation facility should have and maintain an attending veterinarian, on staff or consulting,
26 experienced in marine mammal care that would be willing to assume responsibility for diagnosis,
27 treatment, and medical clearance for release. All documentation of the attending veterinarian's
28 experience would be submitted to NMFS for review prior to issuing an SA. Part C, Number 4 of the
29 SA criteria requires the rehabilitation facility to have sufficient physical and financial resources to
30 maintain appropriate animal care, including release activities.

1 Potential adverse impacts under Alternative D3 from disease transmission would be minimized by
2 measures in the release criteria (Appendix C). Animals would be medically cleared by the attending
3 veterinarian and their assessment team before a release determination is made. The medical
4 assessment would include a hands-on physical examination. A review of the animal's complete
5 history, including all stranding information, diagnostic test results, and medical and husbandry
6 records would also occur. NMFS would require some diagnostic testing to determine the risk to the
7 health of wild marine mammal populations. Additional testing would be required if the animal was
8 part of a UME. These procedures would minimize the potential for disease transmission from a
9 released animal to the wild population.

10 Additional measures to minimize the potential for disease transmission from rehabilitated ice seals
11 (bearded, ringed, ribbon, and spotted seals) would be implemented in the NMFS Alaska Region.
12 NMFS would not authorize responders to transport stranded ice seals beyond the geographic areas
13 where they strand for the purposes of rehabilitation and release back to the wild. NMFS would
14 review the following situations on a case-by-case basis: 1) an ice seal out-of-habitat; 2) ice seals as
15 part of an official UME; and 3) stranded spotted seals in Bristol Bay, AK. NMFS would work with
16 Alaska Native organizations (co-managers of these species) to determine the best possible solution for
17 those ice seals. After consultation with these organizations, NMFS may re-evaluate this policy at any
18 time, particularly with regard to changes in the status of ice seal populations and their habitat.

19 Other potential impacts to released animals would be mitigated by the release criteria. In addition to
20 a medical assessment, behavioral and developmental assessments would be conducted before a
21 release determination. Developmental clearance would reasonably ensure that the animal has attained
22 a sufficient age to be nutritionally independent, including the ability to forage and hunt. Behavioral
23 clearance would include an assessment of an animal's breathing, swimming, diving, locomotion on
24 land (pinnipeds) foraging, and hunting abilities. An evaluation of an animal's visual and auditory
25 functions should be conducted if possible. Any behavioral conditioning must be eliminated prior to
26 release such that the association of food rewards with humans is diminished.

27 Handling and restraint procedures necessary for release would be performed or directly supervised by
28 qualified personnel and if possible, an experienced marine mammal veterinarian would be present to
29 carry out or provide direct on-site supervision of all activities involving the use of anesthesia and
30 sedatives. Only personnel experienced in handling and sampling techniques would be used to
31 complete the activities as quickly as possible. The veterinarian would also provide emergency
32 procedures if necessary. For pinnipeds, personnel would carry out release activities efficiently, to

1 minimize the total time spent on the rookery/haul-out. Experienced personnel would be used during
2 handling and restraint to complete the release activities as quickly as possible. Potential impacts from
3 the transport of animals from rehabilitation facilities to release sites could be minimized by following
4 the APHIS “Specifications for the Humane Handling, Care, Treatment, and Transportation of Marine
5 Mammals” (9 CFR Ch 1, Subpart E). If a commercial vehicle is used to transport an animal, these
6 standards should be complied with. The “Live Animal Regulations” published by the IATA may also
7 be used to minimize transport impacts (IATA 2006). Both sets of standards have specifications for
8 containers, food and water requirements, methods of handling, and care during transit.

9 The weight and dimensions of the instrument package relative to the animal’s size and mass, and
10 duration of attachment, are important considerations in choosing a tag (Wilson and McMahon 2006).
11 The tag size would be kept to the minimum needed to collect the desired data to minimize the
12 potential for increased energetic costs of or behavioral responses to larger tags, but ensuring an
13 adequate battery life to sustain the tag over the expected tag attachment duration (tags are expected to
14 fall off after the failure of a corrodible link or the molt of a pinniped). Tag placement should be
15 selected that will not interfere significantly with an animal’s ability to forage or conduct other vital
16 functions. Pinniped flipper tags would be placed appropriately, so animals would not walk on or be
17 irritated by them. A local anesthetic or analgesic would be administered prior to tagging or freeze
18 branding an animal to minimize pain during application.

19 **5.2.5 Disentanglement Alternatives**

20 Under Alternative E3, impacts to all biological resources from a potential hazardous material spill
21 would be mitigated by the implementation of training prerequisites and the Disentanglement
22 Guidelines. The use of trained personnel and proper equipment and protocols would reduce the
23 potential for spills.

24 Disentanglements of ESA-listed cetaceans and pinnipeds would be authorized under the MMHSRP
25 ESA/MMPA permit, with express consent of the Permit Holder/PI. The MMHSRP would follow all
26 mitigation measures set forth by NMFS PR1 as conditions of their ESA/MMPA permit, and all
27 activities will be conducted in consultation with and with the consent of the Permit Holder/PI. For
28 large whale disentanglements, responders would approach animals gradually, with minimal noise to
29 reduce any reaction. Responders would approach at slow speeds, avoid making sudden changes in
30 speed or pitch, and avoid using reverse gear. Additional caution would be taken when approaching
31 mothers and calves. Only responders with extensive experience operating vessels near large whales

1 would be involved in the vessel approaches. Responders would only include those individuals who
2 have been sufficiently trained in large whale disentanglement according to the Disentanglement
3 Guidelines (Appendix C). NMFS should develop more comprehensive guidelines for large whale
4 disentanglement, as the current guidelines focus primarily on criteria for responder levels. Additional
5 guidelines should include general protocols, policies, and procedures. NMFS should develop a
6 database or other way to track qualifications of personnel.

7 Small cetacean and pinniped disentanglement activities would be authorized under an SA. Only
8 personnel experienced in small cetacean capture techniques would perform rescue activities. For
9 disentanglements of pinnipeds on beach sites, responders would carry out activities efficiently, to
10 minimize disturbance and the amount of time responders occupy the haul-out.

11 For both small cetacean and pinniped disentanglements, NMFS should develop standard
12 disentanglement protocols for these species and a training program similar to the Large Whale
13 Disentanglement Network. In addition, NMFS may develop an additional Article or multiple Articles
14 to be incorporated into the SA to authorize certain facilities (with personnel that have been trained
15 and certified) to conduct capture/rescue and disentanglement activities.

16 **5.2.6 Biomonitoring and Research Alternatives**

17 The following mitigation measures are for actions proposed under Alternatives F2 and F3.

18 **5.2.6.1 Existing Mitigation Measures in NMFS PR1 Permits**

19 The MMHSRP would follow all mitigation measures set forth by NMFS PR1 as conditions of their
20 ESA/MMPA permit. All NMFS PR1 marine mammal permits contain conditions intended to
21 minimize the potential adverse effects of the research activities on the animals. These conditions are
22 based on the type of research authorized, the species involved, information in the literature and from
23 researchers themselves about the effects of particular research techniques and the responses of
24 animals to these activities. Specifically, the following conditions would be stated as requirements in
25 the MMHSRP's ESA/MMPA permit:

- 26 • ***General Approach Measures, Including Precautionary Measures for Young and Females***
27 ***with Young.*** Researchers would exercise caution when approaching animals and must retreat
28 from animals if behaviors indicate the approach may be interfering with reproduction,
29 feeding, or other vital functions. For females with young, researchers would immediately
30 terminate efforts if there is any evidence that the activity may be interfering with pair-

1 bonding or nursing and would not position the research vessel between the female and
2 calf/pup. Researchers may not biopsy sample or tag cetacean calves less than six months of
3 age or females attending calves less than six months of age.

- 4 • **Photography and Filming.** The Permit Holder/PI and all researchers/CIs working under the
5 proposed permit would obtain prior approval by NMFS PR1 for non-research related use of
6 photographs, video, and/or film that were taken to achieve the research objectives, that such
7 activities would not influence the conduct of research in any way, and any film approved for
8 use would include a credit, acknowledgement, or caption indicating that the research was
9 conducted under a permit issued by NMFS under the authority of the MMPA and/or ESA.
- 10 • **Research Personnel.** The Permit Holder/PI would ultimately be responsible for all activities
11 of any individual who is operating under the authority of the proposed permit. Addition of
12 CIs would be approved by the Permit Holder/PI after reviewing their qualifications and
13 research plans. All research personnel would be required to serve a research function and
14 would be qualified to perform that function.
- 15 • **Reporting Conditions.** An annual report would be submitted and reviewed by NMFS PR1
16 for each year the permit is valid. For each marine mammal part taken, imported, exported, or
17 affected, the annual report would include: a description of the part and its assigned
18 identification number; source, collector, country of origin, and authorizing government
19 agency (for imported samples) for each sample reported; a summary of the research analysis
20 conducted on the samples; and a description of the disposition of any marine mammal parts.
21 For live animal activities, the report would include a description of the species, numbers of
22 animals, locations of activities, and types of activities for: live captures; stranding
23 response/disentanglement of marine mammals and endangered/threatened species; specimen
24 collections; euthanasia (including reason for euthanasia and the drugs used); and incidental
25 harassment during activities. The report would include descriptions of the animals' reactions,
26 measures taken to minimize disturbance, research plans for the forthcoming year, and an
27 indication as to when or if any results have been published or otherwise disseminated during
28 the year. At the end of the proposed permit, a final report would be submitted that includes:
29 a reiteration of the objectives, a summary of the research results and how they pertain to or
30 further the research goals stated in the permit application and NMFS conservation plans; and
31 an indication of where and when the research results would be published.
- 32 • **Research in Cooperation with Commercial Vessels.** The permit specifically would not
33 authorize the conduct of research activities aboard or in cooperation with commercial marine

1 mammal viewing vessels or aircraft while they are engaged in such commercial activity.
2 Further, the permit would not authorize cooperation with any vessel or aircraft carrying any
3 non-essential passengers (*i.e.* not essential for the conduct of the research) who either pay a
4 fee in return for being allowed onboard the vessel or aircraft, or who, prior to or after the trip,
5 give “donations” to the PI, CI(s) or Research Assistant(s).

6 • **Research Coordination.** The Permit Holder/PI would be required to notify the appropriate
7 NMFS Regional office at least two weeks in advance to coordinate the dates and locations of
8 the authorized activities. The permit holder would also be required to coordinate with other
9 researchers conducting the same or similar studies on the same species, in the same locations,
10 and at the same time.

11 • **Import/Export of Marine Mammal Parts.** No animal would be harassed or killed for the
12 express purpose of providing specimens to be obtained and/or imported under the proposed
13 permit actions. Parts imported under the authority of the proposed permit would be taken in a
14 humane manner, and in compliance with the ESA, MMPA, Fur Seal Act, and any applicable
15 foreign law. Importation of marine mammal parts is subject to the provisions of 50 CFR
16 parts 14, 216, and 222. Any specimen(s) of species listed in the Appendices to CITES would
17 be accompanied by valid CITES documentation from the exporting country, and, in the case
18 of Appendix-I species, from the USFWS.

19 • **Biological Samples.** All specimen materials collected or obtained under this authority would
20 be maintained according to accepted curatorial standards. After completion of initial research
21 goals, any remaining samples would be deposited into a *bona fide* scientific collection which
22 meets the minimum standards of collection curation and data cataloging as established by the
23 scientific community.

24 • **Additional Required Permits.** The Permit Holder/PI would be required to obtain appropriate
25 authorizations needed from other state or Federal agencies and would be reminded that the
26 NMFS PR permit does not provide authorization for requirements under another state or
27 Federal agencies’ jurisdiction. This would include obtaining necessary permits for research
28 conducted in a NMS, national park, foreign country, etc.

29 **5.2.6.2 Mitigation Measures Common to Specific Research Activities**

30 A number of “good practice or protocol” measures are commonly followed by qualified, experienced
31 personnel to minimize the potential risks associated with some of the research activities under the
32 proposed permit actions. Consistent with the NMFS PR1 issuance criteria requiring personnel

1 authorized to take marine mammals under a permit to have qualifications commensurate with their
2 duties, only qualified, experienced personnel would be allowed to perform intrusive procedures such
3 as remote biopsy sampling and attachment of intrusive tags. Efforts would be made to avoid
4 duplicate sampling of known animals through sharing of sighting and photo-identification
5 information among permit holders. The following outlines common mitigation measures associated
6 with specific research activities and/or species.

7 ***Mitigation for Close Approach, Vessel and Aerial Surveys.*** To minimize disturbance and ensure
8 adequate opportunities for photo-identification, tagging, and sampling, the researchers would
9 approach animal(s) gradually from behind or alongside, rather than head on. An approach is defined
10 as a continuous sequence of maneuvers involving a vessel, aircraft, or researcher's body in the water,
11 including drifting, directed toward an animal(s) for the purposes of conducting authorized research
12 which involves one or more instances of coming closer than 100 yards (91.4 m) to a large whale(s) or
13 50 yards (45.7 m) to a small cetacean (s), seal(s), or sea lion(s). Researchers would approach at slow
14 speeds, avoid making sudden changes in speed or pitch, and avoid using reverse gear. The amount of
15 time spent in close proximity to an animal(s) would be limited to the minimum necessary to meet
16 research objectives. Whenever possible, four-stroke engines would be used, as they are quieter than
17 two-stroke engines. Researchers would leave the vicinity of an animal(s) if the animal(s) shows a
18 response to the presence of the research vessel or aircraft. Approaches to an individual animal would
19 be limited and efforts to approach an individual would be discontinued if the animal displays
20 avoidance behaviors, such as a change in its direction of travel or departures from normal breathing
21 and/or dive patterns. Only personnel with extensive experience operating vessels and aircraft near
22 animals would be involved in close approaches.

23 If manatees are encountered during vessel surveys or other vessel activities, researchers would obey
24 all speed zones and manatee no entry zones. If manatees are observed prior to an encounter, care
25 would be taken to slowly maneuver away from the direction of the animals. If a manatee is
26 encountered while on the water, a minimum distance of 50 ft (15.2 m) would be maintained at all
27 times. If a manatee(s) approaches, vessel engines would be placed in neutral until the animal has
28 passed. If manatees are located during aerial surveys, altitudes would be increased to 1,000 ft (300
29 m), and surveys would cease if the manatees appear to be affected by the over flight. The USFWS'
30 Jacksonville Office and NMFS PR1 would be contacted immediately to report any injuries that occur
31 as a result of authorized research.

1 ***Mitigation for Capture, Restraint, and Handling.*** These procedures would be performed or directly
2 supervised by qualified personnel and an experienced marine mammal veterinarian would be present
3 to carry out or provide direct on-site supervision of all activities involving the use of anesthesia and
4 sedatives. Only personnel experienced in capture and sampling techniques would be used in order to
5 complete the activities as quickly as possible. The precautionary measures for young and females
6 with young described above would be followed during cetacean capture/release activities. During
7 capture/release activities, female animals determined to be in late-term pregnancy (late 2nd and 3rd
8 trimester) will be tagged with a roto-tag so they can be avoided in subsequent sets, and then
9 immediately released.

10 Pinniped research activities would be carried out efficiently, to minimize the total time researchers are
11 occupying the rookery/haul-out and the total number of times a site is disturbed. Stays on rookeries
12 longer than five hours are justified only when it prevents additional disturbance of the site on
13 subsequent days. To avoid respiratory distress, ischemia (restricted blood flow), or nerve damage,
14 animals would be positioned properly (*i.e.*, ventrally recumbent) during anesthesia (Dierauf 1990).
15 Respiration and pCO₂ (measure of carbon dioxide in the blood) would be monitored and oxygen
16 administered, as needed to avoid prolonged breath holding during gas anesthesia, which can result in
17 cardiac hypoxia (lack of oxygen to the heart muscle). Qualified personnel would be prepared to
18 control or assist ventilations when using sedatives. An emergency kit would be readily available to
19 respond to complications or emergencies. The animal's body temperature would be closely
20 monitored and steps would be taken to avoid hypo- and hyperthermia. Drug doses would be
21 calculated on the researcher's best estimate of an animal's lean body mass and metabolic rate.

22 To prevent interactions with Florida manatees or sea turtles during capture activities, vessel personnel
23 would be informed that it is illegal to intentionally or unintentionally harm, harass, or otherwise
24 "take" manatees or sea turtles. Netting activities would cease if a manatee or sea turtle is sighted in the
25 vicinity of the vessel. If a manatee or sea turtle is accidentally captured, the vessel would
26 immediately be stopped and either turned off or put in neutral. Tension on the net would be released
27 to allow the animal the opportunity to free itself. Caution would be exercised when attempting to
28 assist the animal in freeing itself. The appropriate USFWS Field Office and NMFS PR1 would be
29 contacted immediately to report any incidents.

30 ***Mitigation for Attachment of Tags and Scientific Instruments.*** Pinniped flipper tags would be
31 placed appropriately, so animals would not walk on or be irritated by them. Care would be taken
32 when attaching scientific instruments to pinnipeds to prevent thermal burns. The correct proportions

1 of epoxy hardener and resin catalyst would be used to prevent a “hot” mix and the minimum practical
2 amount of epoxy would be used to prevent burning the animal. To minimize the risk of infections
3 from implantable tags, appropriate instrument sterilization and sterile surgery techniques would be
4 used.

5 Measures to minimize the effects of attaching scientific instruments to cetaceans would include the
6 use of stoppers to reduce the force of impact and limit the depth of penetration of the tips of
7 subdermal tags. Arrow tips would be disinfected between and prior to each use, to minimize the risk
8 of infection and cross-contamination. Suction cup mounted tags would be placed behind a cetacean’s
9 blowhole so that there is no risk of any migration of the suction cup resulting in obstruction of the
10 blowhole. A take would be considered to have occurred with any attempt made to tag an animal from
11 a crossbow, air gun, or pole, even if that attempt is unsuccessful. No tagging takes would occur on
12 large cetacean calves less than six months of age or females accompanying such calves. For small
13 cetaceans, no tagging would occur for calves less than one year of age.

14 The tag and/or instrument size and weight would be kept to the minimum needed to collect the
15 desired data to minimize the potential for increased energetic costs of or behavioral responses to
16 larger tags. Tag attachment methods would be minimally invasive, to minimize potential pain or
17 infection. Tag placement would be selected so that it will not interfere significantly with an animal’s
18 ability to forage or conduct other vital functions. All tagged animals should receive follow-up
19 monitoring, including visual observations where feasible, to evaluate any potential effects from
20 tagging activities.

21 ***Mitigation for Marking.*** After freeze branding, the skin would be returned to normal temperature as
22 quickly as possible using water.

23 ***Mitigation for All Sampling Procedures.*** These procedures would be performed or directly
24 supervised by qualified personnel and an experienced marine mammal veterinarian would be present
25 to carry out or provide direct on-site supervision of all activities involving the use of anesthesia and
26 sedatives. A marine mammal veterinarian or other qualified personnel would monitor the physiologic
27 state of each animal (*e.g.*, by monitoring respiratory rate and character, heart rate, body temperature,
28 and behavioral response to handling and sampling procedures). Animals that are physically
29 restrained but continue to struggle or show signs of stress would be released immediately to minimize
30 the risk that continued stress would lead to capture myopathy.

1 **Mitigation for Biopsy Sampling.** During cetacean biopsy sampling, a take would be considered to
2 have occurred with any attempt made to biopsy dart an animal from a crossbow, air gun, or pole, even
3 if that attempt is unsuccessful. In addition, no biopsy sampling takes would occur on large cetacean
4 calves less than six months of age or females accompanying such calves. For small cetaceans, no
5 biopsy sampling would occur for calves less than one year of age. Sterile, disposable biopsy punches
6 would be used to minimize the risk of infection and cross-contamination. Where disposable
7 equipment is not available, liquid chemical sterilants would be used with adequate contact times (as
8 indicated on the product label) to affect proper sterilization. Instruments would be rinsed with sterile
9 water or saline before use on animals. Care would be taken to avoid contact of equipment
10 disinfectants with an animal's skin, and disinfectant agents would be changed periodically to avoid
11 growth of resistant strains of microorganisms.

12 **Mitigation for Blood Sampling.** The volume of blood taken from individual animals at one time
13 would not exceed more than 0.5-1 percent of its body weight, depending on taxa (Dein et al. 2005).
14 Qualified researchers should not need to exceed three attempts (needle insertions) per animal when
15 collecting blood. If an animal cannot be adequately immobilized for blood sampling, efforts to
16 collect blood would be discontinued to avoid the possibility of serious injury or mortality from stress.
17 Sterile, disposable needles would be used to minimize the risk of infection and cross-contamination.
18 Where disposable equipment is not available, liquid chemical sterilants would be used with adequate
19 contact times (as indicated on the product label) to affect proper sterilization. Instruments would be
20 rinsed with sterile water or saline before use on animals. Care would be taken to avoid contact of
21 equipment disinfectants with an animal's skin, and disinfectant agents would be changed periodically
22 to avoid growth of resistant strains of microorganisms.

23 **Mitigation for Ultrasound Sampling.** Rectal and vaginal transducer probes will be well lubricated
24 during sampling. Care will be taken to avoid introducing foreign matter into the vaginal canal.
25 Sedation may be used to minimize animal discomfort. Ultrasound procedures on cetaceans will take
26 place in water as often as possible.

27 **Mitigation for Incidental Mortality.** To ensure that the total number of observed mortalities does not
28 exceed permitted levels, the Permit Holder/PI would notify NMFS PR1 of research-related mortalities
29 by phone as soon as possible after the incident, preferably within 24-72 hours. Within two weeks of
30 the incident, unless other arrangements have been made, the Permit Holder/PI must submit a written
31 report that includes a complete description of the events surrounding the incident and identification of
32 steps that will be taken to reduce the potential for additional incidents.

1 ***Mitigation for Exposure to Playbacks and Other Acoustic Research.*** A particular playback trial
2 would be suspended if the exposed cetaceans show strong reactions, as indicated by sustained
3 breaching and other activities commonly associated with stressed or agitated cetaceans. Other
4 mitigation for this research would be included as conditions of the ESA/MMPA permit.

5 ***Additional Mitigation for USFWS Marine Mammal Species.*** If sea otters, walrus, or manatees are
6 injured or killed during research activities, research would be suspended. A report would be sent to
7 the USFWS, Division of Management Authority, the appropriate USFWS Field Office, and NMFS
8 PR1.

9 **5.2.6.3 Mitigation Measures for Other Biological Resources**

10 Measures would be taken to avoid protected and sensitive habitats during research projects. If
11 activities would occur within the boundaries of a federally protected area, the appropriate personnel
12 would be notified. Notification would include specific dates, locations, and participants involved in
13 the activities. If necessary, permits would be obtained to conduct research in these areas.

14 Nesting sea turtles and birds would be avoided during activities. If necessary, activities would be
15 coordinated with the appropriate State agency/agencies to ensure there would be no adverse impacts.

16 **5.3 Water and Sediment Quality**

17 **5.3.1 Stranding Agreements and Response Alternatives**

18 The SA template (Article III and Article IV, Part B, Number 4) would require SA holders to make
19 every reasonable effort to assist in the clean-up of beach areas where their activities, such as necropsy
20 or specimen collection, contributed to the soiling of the site. NMFS would develop spill prevention
21 best management practices for responders to use to reduce the incidence of spills from equipment,
22 euthanasia solution, etc. These measures would help protect the surrounding environment, including
23 water and sediment quality.

24 **5.3.2 Carcass Disposal Alternatives**

25 Carcass burial on beaches and disposal in State waters would only occur after state and/or local
26 authorities have given permission to conduct such activities. Stranding network members, in
27 coordination with NMFS (if necessary), would obtain any permits necessary and follow any
28 conditions or mitigation set forth in the permits. Approval from state and/or local authorities would
29 ensure that impacts to water and sediment quality would be minimal. The SA template (Article III

1 and Article IV, Part B, Number 4) would require SA holders to make every reasonable effort to assist
2 in the clean-up of beach areas where their activities, such as necropsy or specimen collection,
3 contributed to the soiling of the site. These measures would help protect the surrounding
4 environment, including water and sediment quality.

5 If carcasses are known or assumed (based upon test results or prior knowledge of the species) to have
6 contaminant levels that meet or exceed the definition of hazardous waste under EPA, state, and/or
7 local regulations, they would be taken to an EPA-designated hazardous waste landfill for proper
8 disposal.

9 Non-toxic carcasses may be disposed in Federal waters without a permit. Disposal of carcasses that
10 are known to be hazardous waste at sea may require EPA approval and a permit. These carcasses
11 would be disposed of in an EPA designated ocean dumping site. All EPA dumping sites are managed
12 to avoid or minimize impacts to the marine environment. Materials used to sink carcasses would be
13 chosen to avoid or minimize any impacts to the marine environment.

14 **5.3.3 Rehabilitation Activities Alternatives**

15 Rehabilitation facilities would have any required NPDES, state, and local permits, for facility
16 discharges directly to surface waters. Facilities discharging to POTWs would have any necessary
17 effluent discharge permits and a pretreatment plan in place to meet municipal wastewater treatment
18 standards. Water used in temporary pools would be discharged into a sewer drain, where available,
19 and would be taken to a wastewater treatment plant. No mitigation measures are in place for water
20 drainage into nearshore waters or the use of net pens. The development of a monitoring plan is
21 recommended to determine impacts and potential mitigation measures.

22 **5.3.4 Release of Rehabilitated Animals Alternatives**

23 If hazardous materials or wastes were discharged during release activities, stranding network
24 members would notify the appropriate Federal, state, or local authorities.

25 **5.3.5 Disentanglement Alternatives**

26 If hazardous materials or wastes were released during disentanglement activities, responders would
27 notify the appropriate Federal, state, or local authorities.

1 **5.3.6 Biomonitoring and Research Alternatives**

2 If hazardous materials or wastes were released during biomonitoring and research activities,
3 personnel would notify the appropriate Federal, state, or local authorities.

4 **5.4 Cultural Resources**

5 **5.4.1 Stranding Agreements and Response Alternatives**

6 Under Alternatives A2, A3, A4, and A5, potential damage to cultural resources during stranding
7 response may be avoided by contacting the appropriate SHPO or other local authorities prior to any
8 major land disturbance. Known cultural resources would be avoided during transport and removal
9 activities. If cultural resources are discovered during response operations, all work would cease and
10 the SHPO would be contacted.

11 Stranding response on Native American/Alaska Native lands would be coordinated with the Tribal
12 Historic Preservation Officer (THPO), Native American tribes, Alaska Natives, or other aboriginal
13 peoples to accommodate cultural uses of marine mammals. Responders would also be sensitive to the
14 fact that tribal cultures often involve ceremonial, medicinal, or subsistence uses of plants, animals
15 (including marine mammals), and specific geographic locations. These measures would be taken to
16 minimize or eliminate any potential impacts on Alaska Natives, Native American tribes, or other
17 aboriginal people's cultural uses of coastal resources.

18 The SA template (Article III and Article IV, Part B, Number 4) would require SA holders to make
19 every reasonable effort to assist in the clean-up of beach areas where their activities, such as necropsy
20 or specimen collection, contributed to the soiling of the site. These measures would help protect the
21 surrounding environment, which may include undiscovered cultural resources.

22 **5.4.2 Carcass Disposal Alternatives**

23 Under Alternatives B2 and B3, potential damage to cultural resources would be avoided by contacting
24 the appropriate SHPO or other local authorities before selecting a beach burial site. The proximity of
25 cultural resources to a site may change the method of carcass disposal, if necessary. Known cultural
26 resources would be avoided during transport and removal activities. If cultural resources are
27 discovered during burial operations, all work would cease and the SHPO would be contacted.

28 Carcass disposal on Native American/Alaska Native lands would be coordinated with the THPO,
29 Native American tribes, Alaska Natives, or other aboriginal peoples to accommodate cultural uses of

1 marine mammals. Responders would also be sensitive to the fact that tribal cultures often involve
2 ceremonial, medicinal, or subsistence uses of plants, animals (including marine mammals), and
3 specific geographic locations. These measures would be taken to minimize or eliminate any
4 potential impacts on Alaska Natives, Native American tribes, or other aboriginal people's cultural
5 uses of coastal resources.

6 **5.4.3 Rehabilitation Activities Alternatives**

7 If cultural resources are discovered during activities under Alternatives C2 and C3, all activities
8 would cease and the SHPO/THPO would be contacted. Known cultural resources would be avoided
9 during rehabilitation activities.

10 **5.4.4 Release of Rehabilitated Animals Alternatives**

11 If cultural resources are discovered during release activities under Alternatives D2 and D3, all
12 activities would cease and the SHPO/THPO would be contacted. Known cultural resources would be
13 avoided during release activities.

14 **5.4.5 Disentanglement Alternatives**

15 No mitigation measures are necessary, as impacts would not be expected under the disentanglement
16 alternatives.

17 **5.4.6 Biomonitoring and Research Alternatives**

18 Under Alternatives F2 and F3, impacts to cultural resources during biomonitoring and research
19 activities would be avoided by contacting the appropriate SHPO/THPO or other local authorities prior
20 to any projects that may disturb or damage resources. Known cultural resources would be avoided
21 during research activities. If cultural resources are discovered during these activities, all work would
22 cease and the SHPO/THPO would be contacted.

23 **5.5 Human Health and Safety**

24 **5.5.1 Stranding Agreements and Response Alternatives**

25 For Alternatives A4 and A5, the SA template (Article II, Part C, Number 5) recommends Stranding
26 Network participant organizations to take precautions against injury or disease to any network
27 personnel, volunteers, and the general public when working with live or dead marine mammals. The
28 SA template also requires the stranding network participant to notify the NMFS Regional coordinator

1 within 24 hours of detecting and/or confirming any zoonotic diseases in an animal which could affect
2 human health. In addition, the SA template (Article III and Article IV, Part B, Number 4) would
3 require SA holders to make every reasonable effort to assist in the clean-up of beach areas where their
4 activities, such as necropsy or specimen collection, contributed to the soiling of the site. NMFS
5 would develop spill prevention best management practices for responders to use to reduce the
6 incidence of spills from equipment, euthanasia solution, etc. These measures would help protect the
7 surrounding environment and public health.

8 All SA holders engaged in stranding response would have a health and safety plan for personnel and
9 volunteers that is presented to and reviewed by NMFS as part of their application for a new or
10 renewal SA. Measures that may be utilized by SA holders to reduce health and safety risks during
11 responses include, but are not limited to, the use of protective clothing, face protection, and eye
12 protection. Other elements that may be included in a health and safety plan where feasible are: the use
13 of life jackets and wet or dry suits during water responses; rotation of responders to minimize the
14 amount of exposure and reduce fatigue; availability of first-aid kits and facilities for clean-up; and
15 training for responders in first-aid and CPR. A proper first-aid kit and a person trained in the
16 treatment of drug accidents should be present if etorphine or paralytic agents are used for euthanasia.

17 Risks from the consumption of marine mammal meat would be reduced by continuing to inform
18 Alaska Natives on the potential for contaminants and disease. This is currently done by NMFS
19 through the co-management process with Alaska Natives.

20 Marine mammal oil spill response guidelines have been developed for the MMHSRP (Appendix L).
21 The guidelines would serve as mitigation for impacts under Alternatives A2, A3, A4, and A5.
22 Personnel involved in spill response activities would have to comply with all applicable worker health
23 and safety laws and regulations. The primary Federal regulations are the OSHA standards for
24 Hazardous Waste Operations and Emergency Response (HAZWOPER) (29 CFR 1910.120). Oil spill
25 response personnel may be required to have HAZWOPER training, depending on the extent of their
26 involvement and state regulations. Recommended training for response includes first-aid, Cardio
27 Pulmonary Resuscitation (CPR), the Incident Command System (ICS), aircraft and boating safety,
28 and general oil spill response. Recommended personal protective equipment includes full eye
29 protection, oil resistant clothing, gloves, ear protection, and respiratory protection. The Material
30 Safety Data Sheet (MSDS) for the spilled material would be reviewed and all recommended
31 precautions would be followed. Response personnel would be periodically monitored to determine

1 exposure. Marine mammal stranding network members would be responsible for training and
2 certifying their employees and volunteers.

3 **5.5.2 Carcass Disposal Alternatives**

4 For Alternatives B2 and B3, the SA Template (Article II, Part C, Number 5) recommends Stranding
5 Network participant organizations to take precautions against injury or disease to any network
6 personnel, volunteers, and the general public when working with live or dead marine mammals. The
7 SA template also requires the Stranding Network participant to notify the NMFS Regional
8 coordinator within 24 hours of detecting and/or confirming any diseases of concern in an animal
9 which could affect human health. Response workers would be required to have sufficient protection
10 against infection with zoonotic pathogens, contaminants, and other risks associated with handling
11 decomposing carcasses. Workers would be required to wear, as necessary, protective clothing,
12 gloves, face masks and safety goggles. Equipment used to move and dispose of carcasses would be
13 cleansed and disinfected to reduce the risk of zoonotic pathogens or other possible contaminants. The
14 marine mammal oil spill response guidelines (Appendix L) would serve as mitigation for impacts
15 under Alternatives B2 and B3. These mitigation measures would be the same as those discussed
16 above for oil spill response to stranded animals.

17 The burial or disposal at sea (in state waters) of a carcass would only occur after state and/or local
18 authorities have given permission to conduct such activities. Stranding network members would
19 obtain any permits necessary to conduct carcass burial on beaches or other suitable locations and
20 disposal in state waters. This would include any permits or coordination with the State's health
21 department, to ensure that public health and safety would be protected.

22 **5.5.3 Rehabilitation Activities Alternatives**

23 For Alternatives C3 and C4, the SA template (Article II, Part C, Number 5) recommends Stranding
24 Network participant organizations to take precautions against injury or disease to any network
25 personnel, volunteers, and the general public when working with live or dead marine mammals. The
26 SA template also requires the stranding network participant to notify the NMFS Regional coordinator
27 within 24 hours of detecting and/or confirming any diseases of concern in an animal which could
28 affect human health. The implementation of the Rehabilitation Facility Standards would also serve as
29 mitigation for Alternatives C3 and C4. Section 10 of the standards would require health and safety
30 plans that identify all of the safety issues that may be a factor when working closely with wild marine
31 mammals. Plans would include specific information for the direct handling of all species seen at the

1 facility. Personnel would be trained to identify potential zoonotic diseases and prevent their
2 transmission from animal to human. Staff would be trained to properly handle contaminated
3 equipment and proper sanitation techniques (Section 4).

4 Rehabilitation facilities would follow OSHA regulations regarding personnel protective equipment
5 (29 CFR 1910, subpart I). Safety equipment would be provided, including eye protection, protective
6 clothing, and eye flushing stations. OSHA regulations (29 CFR 1910, subpart D) provide measures to
7 reduce slips, falls, and other physical injuries in the workplace. Protocols for appropriate handling of
8 chemicals would be available, including all MSDS. Hazardous materials and toxic substances would
9 be handled and stored according to OSHA regulations (29 CFR 1910, subpart H and subpart Z). A
10 proper first-aid kit and a person trained in the treatment of drug accidents would be present if
11 etorphine or paralytic agents were used for euthanasia.

12 The marine mammal oil spill response guidelines would serve as mitigation for impacts under
13 Alternatives C2, C3, and C4. Personnel involved in the rehabilitation of oiled marine mammals
14 should have HAZWOPER training. Training on the ICS, first-aid, CPR, crisis management, marine
15 mammal oil spill response, and hazard communication are recommended. Recommended personal
16 protective equipment includes full eye protection, oil resistant clothing, gloves, ear protection, and
17 respiratory protection. The MSDS for the spilled material would be reviewed and all recommended
18 precautions would be followed. Rehabilitation personnel and facilities would be periodically
19 monitored to determine exposure. Facilities would have adequate ventilation to protect against the
20 toxic effects of volatile agents. Marine mammal stranding network members would be responsible
21 for training and certifying their employees and volunteers.

22 **5.5.4 Release of Rehabilitated Animals Alternatives**

23 For Alternatives D2 and D3, the SA template (Article II, Part C, Number 5) recommends Stranding
24 Network participant organizations to take precautions against injury or disease to any network
25 personnel, volunteers, and the general public when working with live marine mammals. Under
26 Alternatives D2 and D3, all SA holders involved in the release of rehabilitated animals would have a
27 health and safety plan. All release personnel would be trained appropriately to avoid or minimize
28 health and safety hazards.

1 **5.5.5 Disentanglement Alternatives**

2 Under Alternatives E2 and E3, safety measures utilized by responders would include immersion suits,
3 life jackets, helmets, and a small closed knife that is available to cut lines and gear in an emergency
4 situation. Typically, a standby vessel (usually a USCG or NOAA vessel) would accompany the
5 responders in case additional assistance is required. Experienced responders would not attempt
6 disentanglement, or would end an attempt, if it was too dangerous. Under Alternative E2, training
7 would be required for East Coast responders in order to be certified for disentanglement. Under
8 Alternative E3, training would be required for responders nationwide in order to be certified for
9 disentanglement. Training would depend upon their level of involvement (see Appendix C,
10 Disentanglement Guidelines). The appropriate training would ensure that responders know the
11 potential safety risks and the methods to avoid or minimize these risks. While these safety measures
12 may reduce some risks, there would always be potential for adverse effects on human health and
13 safety.

14 **5.5.6 Biomonitoring and Research Alternatives**

15 Safety protocols have been developed for health assessment studies. The use of life vests would be
16 required, in order to comply with NOAA's Small Boat Safety Program and policies (NAO 209-125).
17 Gloves and other protective clothing would be used during sampling. Gloves and protective eyewear
18 would be required during the use of liquid nitrogen. It is recommended that at least one emergency
19 medical technician would be present for health assessment activities conducted in water or offshore.
20 If possible, USCG personnel would accompany the research vessels to assist in an emergency and to
21 keep other vessels away from the site.

22 Health and safety plans would be developed for all permitted research actions. Only experienced
23 personnel would be conducting research, which would reduce health and safety risks. NOAA's Small
24 Boat Safety Program and policies (NAO 209-125) and policies on NOAA employees on non-NOAA
25 vessels (NAO 209-115, as applicable) would be followed to reduce risks during vessel operations.
26 NOAA's Aviation Safety Policy (NAO 209-124) would be followed to minimize hazards during
27 aircraft operations.

28 For diagnostic testing and specimen analyses, each individual laboratory should have a Chemical
29 Hygiene Plan, as described in 29 CFR 1910.1450. A Chemical Hygiene Plan would contain work
30 practices, policies, and procedures that ensure a safe environment. Researchers would receive
31 training on the hazards of chemicals used in the laboratory and be provided with the proper

1 equipment for their safe handling, including respiratory protection. These measures would eliminate
2 most of the risks associated with laboratory work.

3 **5.6 Socioeconomics**

4 **5.6.1 Stranding Agreements and Response Alternatives**

5 Stranding network members may be able to use available funds from the Prescott Grant Program to
6 help offset costs incurred by response activities.

7 **5.6.2 Carcass Disposal Alternatives**

8 Stranding network members may be able to use available funds from the Prescott Grant Program to
9 help offset costs incurred by carcass disposal activities.

10 **5.6.3 Rehabilitation Activities Alternatives**

11 To minimize the impacts of implementing the Rehabilitation Facility Standards, NMFS would
12 provide a reasonable process for facilities to be upgraded to meet the minimum standards.
13 Substandard facilities may be improved using funds that may be available through the Prescott Grant
14 Program. Prescott funds may also be used to improve facilities that meet the minimum standards,
15 with the goal to achieve or exceed the recommended standards.

16 **5.6.4 Release of Rehabilitated Animals Alternatives**

17 Stranding network members may be able to use available funds from the Prescott Grant Program to
18 help offset costs incurred by release activities.

19 **5.6.5 Disentanglement Alternatives**

20 Disentanglement training expenses would be covered by the MMHSRP. This would eliminate most
21 expenses associated with training.

22 **5.6.6 Biomonitoring and Research Alternatives**

23 Some biomonitoring and research expenses would be covered by the MMHSRP, eliminating some of
24 the socioeconomic impact to personnel.