

Science, Service, Stewardship



National Marine Fisheries Service: Airborne Noise Issues from the Perspective of the Marine Mammal Protection Act

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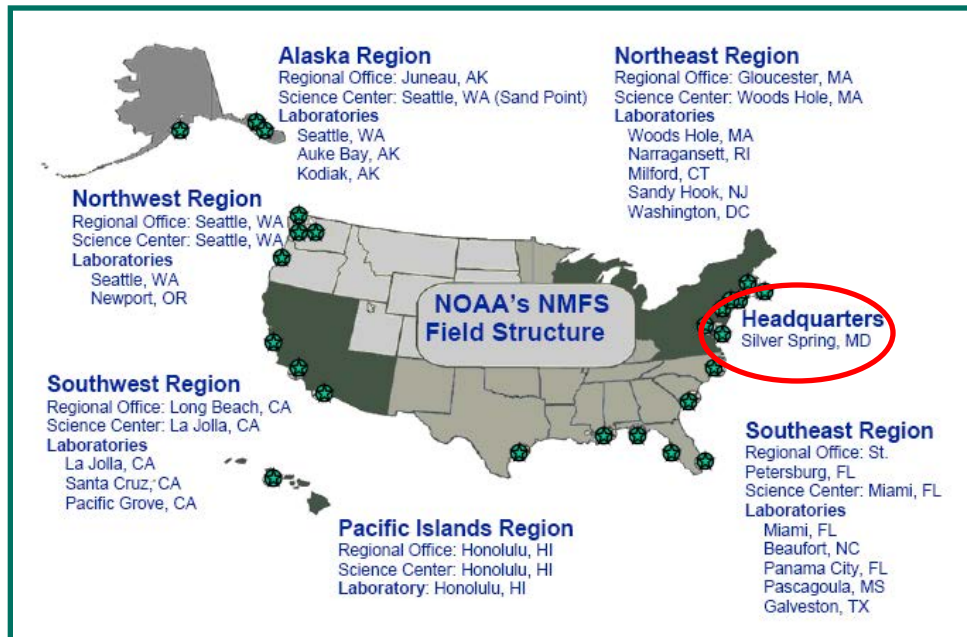
<http://www.nmfs.noaa.gov/pr/>

**NOAA
FISHERIES
SERVICE**

AVIATION NOISE IMPACTS ROADMAP ANNUAL MEETING, 19-20 April 2011



National Marine Fisheries Service, Office of Protected Resources (NMFS OPR)



NMFS OPR works to: **conserve, protect, & recover** protected marine species



Marine Mammal Species Under NMFS Jurisdiction

- **Marine Mammals (~62 species in U.S. waters)**
 - Cetaceans: Baleen Whales
 - Cetaceans: Toothed Whales
 - Pinnipeds: Seals & Sea Lions (in air & in water)
- **USFWS Jurisdiction:** Walrus, polar bear, sea otter, & manatee





Marine Mammal Protection Act



- **Marine Mammal Protection Act of 1972 (MMPA) :**
Afford protection of all marine mammal species regardless of the species status.
- **MMPA applies to all persons subject to U.S. jurisdiction, including on the high seas.**
- **MMPA establishes a moratorium on the “taking” of marine mammals, except via exemption:**
 - Subsistence harvest by Alaska Natives
 - Incidental commercial fishery interactions
 - Incidental take (non-fishing activities)
 - Scientific research, public display, and photography



MMPA



- The term take means to harass, hunt, capture, or kill or attempt to harass, hunt, capture or kill any marine mammal
- The term harassment means any act of pursuit, torment, or annoyance which-
 - Has the potential to **injure** a marine mammal or marine mammal stock in the wild (Level A Harassment)
 - Has the potential to **disturb** a marine mammal or marine mammal stock in the wild by causing **disruption of behavioral patterns**, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering but which does not have the potential to injure a marine mammal or marine mammal stock in the wild (Level B Harassment)



Types of Authorizations Issued by NMFS OPR



Incidental

- “Incidental” (not intentional) taking of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographic region

Directed

- For any proposed marine mammal scientific research activity that involves take of marine mammals



Aircraft Noise

- **NMFS primarily deals with underwater sound sources but airborne sources can be an issue**

- **Sources:**

- Transportation
- Military
- Offshore oil & gas
- Recreational flights
- Research
- Whale-watching





Aircraft & Issues with Marine Mammals



● Pinnipeds

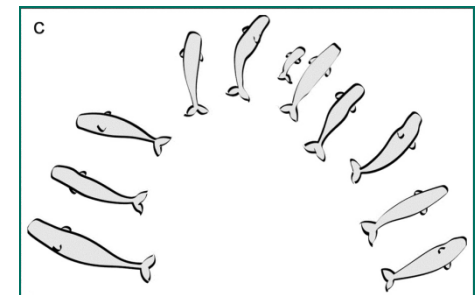
- Flushing from beaches/ice (injury/death)
- Behavioral responses (abandon haul-outs/rookeries, etc.)

● Cetaceans

- Behavioral responses (e.g., change in dive patterns)

● Factors Affecting Response

- Aircraft type (helicopter vs. fixed-winged)
- Altitude & flight patterns (hovering/circling)
- Behavioral context/habitat (variable)
- Visual vs. acoustic



Smultea et al. 2008



Incidental



● Example activities

- Missile & rocket launches (e.g., Vandenberg AFB & Kodiak Island)
 - Noise from launches & associated aircraft
- St. George's Lighthouse Restoration (Del Norte, CA)
 - Noise from helicopter approaching lighthouse

● Take considered

- Potential impacts to pinnipeds at haul-outs/rookeries
- Level B harassment (primarily determined by altitude)
 - In air (re: 20 μ Pa) $RL > 90 \text{ dB}_{\text{rms}}$ for harbor seals
 - In air (re: 20 μ Pa) $RL > 100 \text{ dB}_{\text{rms}}$ for all other pinniped species



Mitigation & Monitoring Measures (co-occur w/activity)



- **To minimize the impacts from airborne sound:**
 - Time area avoidance
 - No launches/approaches during pupping season
 - Altitude restrictions
 - Marine mammal monitoring flights maintain minimum altitude of 500 to 1000 ft.
 - Flight pattern restrictions
 - No direct approaches of haul-out/rookeries by helicopters



Directed



● Research permits/authorizations

- Scientific research & professional photography/film making
 - Any marine mammal sighted is considered a take if the aircraft altitude is 1000 ft or below
 - Permit (SREP) or authorization (GA LOC)

● Aerial viewing guidelines/regulations

- Whale-watching & aerial sightseeing
- Guidelines: vary by region
- Regulations: pertain to Steller sea lions, humpback whales, North Atlantic right whale (ESA listed species)
- <http://www.nmfs.noaa.gov/pr/education/regional.htm>



Data Gaps



- **Quantification of received level**
- **Behavioral disruption (complex & variable)**
 - Pinnipeds vs. cetaceans (sensitive species?)
 - Visual vs. acoustic stimuli
 - Aircraft type (including unmanned aircraft)
 - Altitude, speed, & flight patterns
 - Context/behavioral state
 - Effects on vocalization
- **General noise issues: cumulative & population-level effects**



**Thanks for listening!
Questions?**



<http://www.nmfs.noaa.gov/pr/acoustics>
<http://www.nmfs.noaa.gov/pr/permits/>

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