



**NOAA
FISHERIES**

Proposed Rule for Safely Deterring Marine Mammals

Conflicts between humans and marine mammals can arise when the animals interact with fishing gear or catch, damage property, or endanger people. Although the Marine Mammal Protection Act of 1972 (MMPA) and the Endangered Species Act of 1973 (ESA) prohibit the “taking” of marine mammals, there are limited exceptions to the prohibitions under certain circumstances. Section 101(a)(4)(A) of the MMPA allows “specified persons” (e.g., the owner of fishing gear or catch, the owner of private property, or an employee or agent of such owner as well as any person deterring a marine mammal from endangering personal safety and any government employee to deter a marine mammal from damaging public property) to use measures that deter marine mammals from damaging fishing gear, catch, personal or public property, or endangering personal safety, **as long as those measures do not result in death or serious injury of marine mammals.**

What is NOAA Fisheries proposing?

NOAA Fisheries has developed proposed guidelines under the authority of the MMPA for deterring marine mammals under our jurisdiction¹ and recommended specific measures for species of marine mammals listed under ESA, which are intended to provide tools for fishermen and property owners to protect their fishing gear, catch, and property, while also reducing intentional lethal takes and serious injuries of marine mammals.

While the guidelines and specific measures are not mandatory, section 101(a)(4)(B) of the MMPA provides protection from liability for take resulting from such deterrence measures by specifying that any actions taken to deter marine mammals that are consistent with the guidelines or recommendations are not a violation of the MMPA. The rule also proposes to prohibit some deterrents that would have a significant adverse effect on marine mammals. Specified persons may choose to deter marine mammals using deterrents not included in the guidelines, recommended specific measures, or prohibitions. However, if a marine mammal is killed or seriously injured as a result of such deterrence, the protection from liability in section 101(a)(4)(B) would not apply and the take would constitute a violation of the MMPA.

How long is the public comment period?

The public comment period is open for 60 days from August 31, 2020 to October 30, 2020.

Has NOAA Fisheries evaluated some of the deterrents already available?

Yes, NOAA Fisheries has evaluated several different types of deterrents that can be classified broadly as either “acoustic” or “non-acoustic” deterrents. However, the evaluation did not include an analysis of the effectiveness of the devices or methods — it only considered the potential impacts to the health and welfare of marine mammals.

¹NOAA Fisheries and the U.S. Fish and Wildlife Service share responsibility for implementing the MMPA and the ESA. Under the MMPA, NOAA Fisheries has jurisdiction over cetaceans (whales, dolphins, and porpoises) and most pinnipeds (seals and sea lions). The U.S. Fish and Wildlife Service has jurisdiction over manatees, sea otters, polar bears, and walrus. This proposed rule only applies to species of marine mammals under NOAA Fisheries jurisdiction.

Guidelines by Taxa:



Mysticetes



Odontocetes



Pinnipeds

Recommend Specific Measures by Species:



ESA Mysticetes



Cook Inlet Beluga



Insular False Killer Whale



Southern Resident Killer Whale



Sperm Whale



Hawaiian Monk Seal



Western Steller Sea Lion



Other ESA Pinnipeds

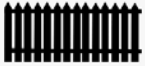
Deterrent Types:

NON-ACOUSTIC

Visual



Physical Barriers



Tactile



Chemosensory



ACOUSTIC

Impulsive: Explosive



Impulsive: Non-Explosive



Non-Impulsive



What happens if a marine mammal is accidentally injured or killed by a deterrent?

The proposed rule includes a requirement for any marine mammals injured or killed in the course of deterrence to be reported to NOAA Fisheries via either an online form or postage-paid mailing, which is similar to the requirement for commercial fishermen to report marine mammals incidentally killed or injured during commercial fishing operations. This would help us monitor and evaluate the impacts of various deterrents and update the guidelines and recommended specific measures as needed.

Are there alternatives to using deterrents?

NOAA Fisheries strongly encourages fishermen, private property owners, and government officials to practice avoidance techniques prior to attempting to deter any marine mammal. Avoiding interactions is the safest method for preventing death or serious injury to marine mammals and the most definitive way to minimize risks to human safety. If deterrents are needed, NOAA Fisheries strongly recommends starting with less impactful techniques first (e.g., visual, physical barriers, in-air noisemakers, water deterrents), before using more impactful deterrents (e.g., tactile – projectiles, explosives).

Where is the proposed rule posted?

The Proposed Rule was published in the Federal Register on August 31, 2020 and can be found online at <https://www.fisheries.noaa.gov/action/guidelines-safely-detering-marine-mammals>

NOAA Fisheries is accepting comments until October 30, 2020 and can be submitted at: www.regulations.gov/#!docketDetail;D=NOAA-NMFS-2020-0109

Additional Resources

Long, K.J., M.L. DeAngelis, L.K. Engleby, D.A. Fauquier, A.J. Johnson, S.D. Kraus, and S.P. Northridge. Marine Mammal Non-Lethal Deterrents: Summary of the Technical Expert Workshop on Marine Mammal Non-Lethal Deterrents, 10-12 February 2015, Seattle, Washington. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-OPR-50. 38 p. <https://repository.library.noaa.gov/view/noaa/15852>

“Deterring ‘Nuisance’ Pinnipeds on the West Coast of the U.S.”: <https://www.fisheries.noaa.gov/west-coast/marine-mammal-protection/detering- nuisance-pinnipeds>

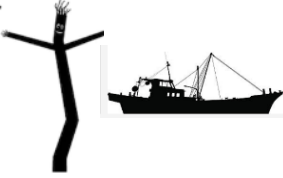









“Deterring Steller Sea Lions in Alaska”: <https://www.fisheries.noaa.gov/alaska/endangered-species-conservation/detering-steller-sea-lions-alaska>

“Draft NMFS Acoustic Deterrent Web Tool”: <https://jmlondon.shinyapps.io/NMFSAcousticDeterrentWebTool/>

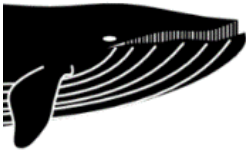





















Deterrent Types NOAA Fisheries Evaluated

(See the remaining tables in this Fact Sheet for guidelines, specific measures, & prohibitions for specific deterrent types.)

| Non-Acoustic Deterrent Types | | | | | | Acoustic Deterrent Types | | | |
|--|---|---|---|---|--|--|---|---|--|
| Visual | Physical Barriers | Chemo-sensory | Tactile: Projectiles | Tactile: Manual | Tactile: Electrical | Tactile: Water | Impulsive: Explosive | Impulsive: Non-Explosive | Non-Impulsive |
|  |  |  |  |  |  |  |  |  |  |
| <ul style="list-style-type: none"> Flags, pinwheels, streamers, & air dancers Bubble curtains Flashing & strobe lights Human attendants Patrol animals Predator shapes Vessel patrolling Unmanned aircraft systems | <ul style="list-style-type: none"> Rigid fencing (in air) Horizontal bars Bull rails Gates Closely spaced bars Containment booms Waterway barriers Swim step protectors | <ul style="list-style-type: none"> Chemical irritants Corrosive chemicals Taste deterrents | <ul style="list-style-type: none"> Projectiles with compressed air/gas Projectiles with firearms Other projectiles (arrows, spears, darts) | <ul style="list-style-type: none"> Fixed sharp (nails & barbed wire) Manual sharp (gaffs & hooks) Manual blunt (crowder boards, blunt-tipped poles, & broom or mop handle) | <ul style="list-style-type: none"> Electric fencing (in air/water) Electric mats | <ul style="list-style-type: none"> Hose Sprinkler Water gun | <ul style="list-style-type: none"> Fireworks Bird banger Bird whistler Bird screamer Bear banger using pencil launcher Propane cannon Explosive pest control devices (seal bombs & cracker shells) | <ul style="list-style-type: none"> Banging objects (in air/water) Passive acoustic deterrent (in air) Low frequency, broadband devices Pulsed power devices | <ul style="list-style-type: none"> Acoustic alarms (pingers & transducers) In-air noise makers (air horns, sirens, whistles) Predator sounds & alarm vocalizations (via underwater speaker) |

Non-Acoustic Deterrents: Non-ESA Cetacean (Mysticete & Odontocete) Taxa












| GUIDELINES* | | | | | | PROHIBITIONS | | | |
|--|---|---|---|---|---|---|---|---|---|
| Taxa | Visual | Physical Barriers | Tactile: Projectile | Tactile: Manual | Tactile: Water | Visual | Chemo-sensory | Tactile: Projectile | Tactile: Manual |
| | <ul style="list-style-type: none"> Bubble curtains Flashing or strobe lights Predator shapes Vessel patrolling Unmanned Aircraft Systems | Containment booms, waterway barriers, & log booms | Foam projectiles with toy guns | Blunt objects: blunt tip poles, brooms, mop handles, etc. | Water hoses, sprinklers, & water guns | Vessel chasing | Any chemical irritants, corrosive chemicals, & other taste deterrents | Firearm, bow, or spear gun | Sharp objects |
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|  |  |  |  |  |  |  |  |  |  |

*These guidelines include additional implementation provisions for some deterrents; see proposed rule for details.

GENERAL PROHIBITIONS

- Targeting a deterrent action at a marine mammal calf or pup
- Striking a marine mammal's head or blowhole when attempting to deter a marine mammal
- Deploying or attempting to deploy a deterrent into the middle of a group of marine mammals
- Feeding or attempting to feed a marine mammal pursuant to 50 CFR 226.3 even for the purposes of deterrence
- Deterring or attempting to deter any marine mammal demonstrating signs of aggression, including charging, lunging, or vocalizing, except when necessary to deter a marine mammal from endangering personal safety
- Approaching certain ESA-listed marine mammals, including humpback whales in Alaska, North Atlantic right whales, western Steller sea lions, and killer whales in Washington, pursuant to 50 CFR 223.214 and 224.103

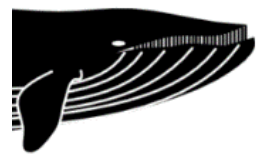









Non-Acoustic Deterrents: Non-ESA Pinniped Taxa

| GUIDELINES* | | | | | | | PROHIBITIONS | | | |
|--|---|---|--|---|---|---|--|---|---|---|
| Taxa | Visual | Physical Barriers | Tactile: Electrical | Tactile: Projectile | Tactile: Manual | Tactile: Water | Visual | Chemo-sensory | Tactile: Projectile | Tactile: Manual |
| | <ul style="list-style-type: none"> Bubble curtains Flashing or strobe lights Predator shapes Vessel patrolling Unmanned Aircraft Systems Air dancers, flags, pinwheels, & streamers Human attendants | <ul style="list-style-type: none"> Containment booms, waterway barriers, & log booms Horizontal bars/bull rails Rigid fencing (in air) Swim step protectors | <ul style="list-style-type: none"> Electric fencing (in air) Low voltage electric mats | <ul style="list-style-type: none"> Foam projectiles with toy gun Paintballs with paintball gun Sponge grenades with hand held launcher Blunt objects with slingshot | Blunt objects: blunt tip poles, brooms, mop handles, etc. | Water hoses, sprinklers, & water guns | <ul style="list-style-type: none"> Vessel chasing Patrolling animals | Any chemical irritants, corrosive chemicals, & other taste deterrents | <ul style="list-style-type: none"> Using a firearm, except for bird bombs and cracker shells Discharging a firearm at or within 100 yards (91.4 m) of a Steller sea lion west of 144 °W longitude | Sharp objects |
|  |  |  |  |  |  |  |  |  |  |  |

*These guidelines include additional implementation provisions for some deterrents; see proposed rule for details.

GENERAL PROHIBITIONS

- Targeting a deterrent action at a marine mammal calf or pup
- Striking a marine mammal's head or blowhole when attempting to deter a marine mammal
- Deploying or attempting to deploy a deterrent into the middle of a group of marine mammals
- Feeding or attempting to feed a marine mammal pursuant to 50 CFR 226.3 even for the purposes of deterrence
- Deterring or attempting to deter any marine mammal demonstrating signs of aggression, including charging, lunging, or vocalizing, except when necessary to deter a marine mammal from endangering personal safety
- Approaching certain ESA-listed marine mammals, including humpback whales in Alaska, North Atlantic right whales, western Steller sea lions, and killer whales in Washington, pursuant to 50 CFR 223.214 and 224.103








| Acoustic Deterrents: Non-ESA Cetacean (Mysticete & Odontocete) Taxa | | | | |
|---|--|---|---|---|
| GUIDELINES* | | | PROHIBITIONS | |
| Taxa | Impulsive: Non-Explosives | Non-Impulsive: <170 dB RMS | Impulsive: Explosive | Non-Impulsive |
| | Banging objects (e.g., Oikomi pipes) underwater when visibility \geq 100 m | <ul style="list-style-type: none"> Acoustic alarm (i.e., pingers/transducers) Predator sounds/alarm vocalizations using underwater speakers | Any impulsive explosive | Any non-impulsive device with an underwater source level \geq 170 dB RMS, unless that device has been evaluated and meets NMFS criterion via the NMFS Acoustic Deterrent Web Tool |
|  |  |  |  |  |
|  |  |  |  |  |

*These guidelines include additional implementation provisions for some deterrents; see proposed rule for details.

GENERAL PROHIBITIONS

- Targeting a deterrent action at a marine mammal calf or pup
- Striking a marine mammal's head or blowhole when attempting to deter a marine mammal
- Deploying or attempting to deploy a deterrent into the middle of a group of marine mammals
- Feeding or attempting to feed a marine mammal pursuant to 50 CFR 226.3 even for the purposes of deterrence
- Deterring or attempting to deter any marine mammal demonstrating signs of aggression, including charging, lunging, or vocalizing, except when necessary to deter a marine mammal from endangering personal safety
- Approaching certain ESA-listed marine mammals, including humpback whales in Alaska, North Atlantic right whales, western Steller sea lions, and killer whales in Washington, pursuant to 50 CFR 223.214 and 224.103

Acoustic Deterrents: Non-ESA Pinniped Taxa






| GUIDELINES* | | | | PROHIBITIONS | | |
|---|---|--|--|--|--|---|
| Taxa | Impulsive: Explosives | Impulsive: Non-Explosives | Non-Impulsive: <170 dB RMS | Impulsive: Explosive | Impulsive: Non-Explosive | Non-Impulsive |
| | <ul style="list-style-type: none"> Aerial pyrotechnics/fireworks Bird bangers, bird whistlers/screamers Bear bangers using pencil launcher Propane cannons Cracker shells, bird bombs, seal bombs, & underwater firecrackers when visibility \geq 100 m | <ul style="list-style-type: none"> Banging objects (e.g., Oikomi pipes) underwater; low frequency broadband devices; or pulsed powered devices when visibility \geq 100m In-air passive acoustic devices (e.g., hanging chains, cans) | <ul style="list-style-type: none"> Acoustic alarm (i.e., pingers/transducers) Predator sounds/alarm vocalizations using underwater speakers Air horns, in-air noisemakers, sirens, & whistles | <ul style="list-style-type: none"> Any impulsive explosives not included in the guidelines or specific measures Seal bombs, underwater & cracker shells, when visibility is <100m (e.g., at night, fog) | Banging objects underwater, pulse powered devices, or low frequency broadband devices when visibility is <100m (e.g., at night, fog) | Any non-impulsive device with an underwater source level \geq 170 dB RMS, unless that device has been evaluated and meets NMFS criterion via the NMFS Acoustic Deterrent Web Tool |
|  |  |  |  |  |  |  |

*These guidelines include additional provisions for some deterrents; see proposed rule for details.

GENERAL PROHIBITIONS

- Targeting a deterrent action at a marine mammal calf or pup
- Striking a marine mammal's head or blowhole when attempting to deter a marine mammal
- Deploying or attempting to deploy a deterrent into the middle of a group of marine mammals
- Feeding or attempting to feed a marine mammal pursuant to 50 CFR 226.3 even for the purposes of deterrence
- Deterring or attempting to deter any marine mammal demonstrating signs of aggression, including charging, lunging, or vocalizing, except when necessary to deter a marine mammal from endangering personal safety
- Approaching certain ESA-listed marine mammals, including humpback whales in Alaska, North Atlantic right whales, western Steller sea lions, and killer whales in Washington, pursuant to 50 CFR 223.214 and 224.103

Recommended Specific Measures*: ESA Cetacean (Mysticete & Odontocete) Species










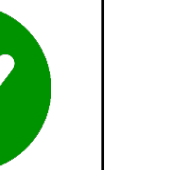




















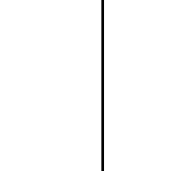


| ESA Cetacean species | Non-Acoustic Deterrents | | | | | Acoustic Deterrents | |
|---|---|---------------------------------------|--------------------------------|---|---------------------------------------|---|--|
| | Visual | Physical Barriers | Tactile: Projectile | Tactile: Manual | Tactile: Water | Impulsive: Non-Explosives | Non-Impulsive |
| | <ul style="list-style-type: none"> Bubble curtains Flashing or strobe lights Predator shapes Vessel patrolling Unmanned Aircraft Systems | Containment booms & waterway barriers | Foam projectiles with toy guns | <ul style="list-style-type: none"> Crowder boards Blunt objects: blunt tip poles, brooms, mop handles, etc. | Water hoses, sprinklers, & water guns | Banging objects (e.g., Oikomi pipes) underwater when visibility is ≥ 100 m | <ul style="list-style-type: none"> Underwater devices <170dB including acoustic alarms (i.e., pingers, transducers) Predator sounds/alarm vocalizations using underwater speakers |
|  ESA Mysticetes | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |
|  Cook Inlet Beluga | ✔ | | | | ✔ | | |
|  Insular False Killer Whale | ✔ | | | ✔ | ✔ | | |
|  Southern Resident Killer Whale | ✔ | ✔ | ✔ | | ✔ | ✔ | ✔ |
|  Sperm Whale | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ | ✔ |

*The specific measures include additional implementation provisions; see proposed rule for details. Blank cells indicate those deterrents are not included as specific measures.

Recommended Specific Measures*: ESA Pinniped Species

Non-Acoustic Deterrents

Acoustic Deterrents

| ESA Pinniped species | Visual | Physical Barriers | Tactile: Electrical | Tactile: Projectile | Tactile: Projectile | Tactile: Manual | Tactile: Water | Impulsive: Explosives | Impulsive: Explosives | Impulsive: Non-Explosives | Non-Impulsive | |
|--|---|---|--|---|---|---|---|--|--|--|---|---|
| | <ul style="list-style-type: none"> Bubble curtains Flashing or strobe lights Predator shapes Vessel patrolling Unmanned Aircraft Systems Air dancers, flags, pinwheels, & streamers | <ul style="list-style-type: none"> Containment booms & waterway barriers Rigid fencing (in air) Horizontal bars/bull rails Gates/closely spaced bars Swim stair protectors | <ul style="list-style-type: none"> Electric fencing (in air) Low voltage electric mats | <ul style="list-style-type: none"> Foam projectiles with toy guns Paintballs with paintball guns Sponge grenades with hand held launcher | Blunt objects with slingshot | <ul style="list-style-type: none"> Crowder boards Blunt objects: blunt tip poles, brooms, mop handles, etc. | Water hoses, sprinklers, & water guns | Cracker shells, bird bombs, seal bombs, & underwater firecrackers when visibility \geq 100 m | <ul style="list-style-type: none"> Aerial pyrotechnics/fireworks Bird bangers, bird whistlers/screamers Bear bangers using pencil launcher Propane cannons | <ul style="list-style-type: none"> Banging objects (e.g., Oikomi pipes) underwater; low frequency broadband devise; or pulsed power devices when visibility \geq 100 m In-air passive acoustic devices (e.g., hanging chains, cans) | <ul style="list-style-type: none"> Underwater devices <170dB including acoustic alarms (i.e., pingers, transducers) Predator sounds/alert vocalizations using underwater speakers Air horns, in-air noisemakers, sirens, whistles | |
|  Other ESA Pinnipeds |  |  |  |  |  |  |  |  |  |  |  |  |
|  Hawaiian Monk Seal |  |  |  |  | |  |  | | |  |  | |
|  Western Steller Sea Lion |  |  |  |  |  |  |  | |  |  |  | |

*The specific measures include additional implementation provisions; see proposed rule. Blank cells indicate those deterrents are not included as specific measures.

Definitions associated with proposed rule

Acoustic deterrent means any deterrent that produces sound either in air or underwater.

Impulsive acoustic deterrents produce sounds that are typically transient, brief (less than 1 second), broadband (produce sound over a wide frequency range), consist of high peak sound pressure with rapid rise time and rapid decay (peak sound increases and dissipates quickly), and generally have an increased capacity to affect marine mammal hearing sensitivity. Examples include: “seal bombs,” firecrackers, banging pipes, “bird bangers,” etc.

Non-impulsive acoustic deterrents typically only have small fluctuations in decibel (dB) level, making them less likely to affect hearing sensitivity compared to impulsive sources. Examples include: pingers, predator sounds using underwater speakers, air horns, etc.

Chemo-sensory deterrent means any deterrent that pertains to the sensing of chemicals by taste, including non-regulated substances (e.g., hot sauce, vinegar) and chemical irritants and corrosive chemicals as defined by the Occupational Safety and Health Administration.

Electrical deterrent means any deterrent that produces electricity as a means to deter a marine mammal upon contact.

Explosive means the same as defined in 27 CFR 555.11, any chemical compound, mixture, or device, the primary or common purpose of which is to function by explosion. The term includes, but is not limited to: dynamite and other high explosives, black powder, pellet powder, initiating explosives, detonators, safety fuses, squibs, detonating cord, igniter cord, and igniters.

Physical barrier means any object that blocks passage by a marine mammal, including the following: containment booms, waterway barriers, and log booms; gates or closely spaced poles; horizontal bars such as bull rails; rigid fencing; and swim-step protectors.

Serious injury is any injury that will likely result in death (50 CFR 229.2).

Specified persons means the owner of fishing gear, catch, or private property, or an employee or agent of such owner, to deter marine mammals from damaging fishing gear, catch, or private property as well as any person deterring a marine mammal from endangering personal safety and any government employee to deter a marine mammal from damaging public property.

Tactile deterrent means any deterrent that physically comes in contact with a marine mammal, whether deployed manually or projected by an accompanying device, including: electrical deterrents; projectiles used with firearms; projectiles used with compressed air or gas; projectiles deployed with any other device; sharp or blunt objects, fixed in place or manually deployed; and water deterrents.

Take

MMPA statutory definition: to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal (16 U.S.C. 1362).

MMPA regulatory definition: to harass, hunt, capture, collect, or kill, or attempt to harass, hunt, capture, collect, or kill any marine mammal. This includes, without limitation, any of the following: The collection of dead animals, or parts thereof; the restraint or detention of a marine mammal, no matter how temporary; tagging a marine mammal; the negligent or intentional operation of an aircraft or vessel, or the doing of any other negligent or intentional act which results in disturbing or molesting a marine mammal; and feeding or attempting to feed a marine mammal in the wild (50 CFR 216.3).

ESA statutory definition: to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct (16 U.S.C. 1531).

Visual deterrent means any deterrent that relies on a marine mammal’s visual acuity and perception, including the following: air dancers, flags, pinwheels, and streamers; bubble curtains; flashing lights or strobe lights; human attendants; patrol animals; predator shapes; vessel chasing; vessel patrolling; and unmanned aircraft systems.



Mysticetes:
Baleen Whales



Odontocetes:
Toothed Whales,
Dolphins, &
Porpoises



Pinnipeds:
Seals & Sea Lions

