

MASTER GLOSSARY OF TERMS

Term	Definition
Acoustics	The scientific study of sound, especially of its generation, transmission, and reception.
Active sonar	Detects objects by creating a sound pulse, or ping, that transmits through the water and reflects off the target, returning in the form of an echo. This is a two-way transmission (source to reflector to receiver).
Alternative	A different method for accomplishing the Proposed Action. An alternative can consist of the same action in a different location, or a modification to the Proposed Action.
Ambient noise	The typical or persistent environmental background noise present in the ocean.
Anadromous	Species of fish that are born in freshwater, migrate to the ocean to grow into adults, and return to freshwater to spawn.
Anthropogenic noise	Noise related to, or produced by, human activities.
Antisubmarine warfare (ASW)	Naval operations conducted against submarines, their supporting forces, and operating bases.
Baleen	In some whales (see Mysticete below), the parallel rows of fibrous plates that hang from the upper jaw and are used for filter feeding.
Bathymetry	The measurement of water depth at various places in a body of water; the information derived from such measurements.
Behavioral effect	Defined in this EIS/OEIS as a variation in an animal's behavior or behavior patterns that results from an anthropogenic acoustic exposure and exceeds the normal daily variation in behavior, but which arises through normal physiological process (it occurs without an accompanying physiological effect).
Benthic	Referring to the bottom-dwelling community of organisms that creep, crawl, burrow, or attach themselves to either the sea bottom or such structures as ships, buoys, and wharf pilings (e.g., crabs, clams, worms).
Biologically important activities/behaviors	Those activities or behaviors essential to the continued existence of a species, such as migration, breeding/calving, or feeding.
Cetacean	An order of aquatic mammals such as whales, dolphins, and porpoises.
Critical Habitat	Critical habitat is defined in section 3 of the Endangered Species Act (ESA) as (1) the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the ESA, on which are found those physical or biological features (i) essential to the conservation of the species and (ii) that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.
Cumulative impact	The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.
Decibel (dB)	A unit used to express the relative difference in power, usually between acoustic or electrical signals, equal to 10 times the common logarithm of the ratio of the two levels. Since the decibel scale is exponential and not linear, a 20-dB sound is 10 times louder than a 10-dB sound, a 30-dB sound is 100 times louder than a 10-dB sound.
Demersal	Living at or near the bottom of a waterbody, but having the capacity for active swimming. Term used particularly when describing various fish species.

Term	Definition
Distinct population segment (DPS)	A vertebrate population or group of populations that is discrete from other populations of the species and significant in relation to the entire species. The ESA provides for listing species, subspecies, or distinct population segments of vertebrate species.
Endangered species	Any species that is in danger of extinction throughout all or a significant portion of its range (ESA §3[6]).
Energy flux density level (EFDL)	The energy traversing in a time interval over a small area perpendicular to the direction of the energy flow, divided by that time interval and by that area. EFDL is stated in dB re 1 $\mu\text{Pa}^2\text{-s}$ for underwater sound.
Epifauna	Organisms living on the surface of the sediment/sea bed/substrate.
Essential fish habitat (EFH)	Those waters and substrate that are defined within Fishery Management Plans for federally-managed fish species as necessary to fish for spawning, breeding, feeding, or growth to maturity.
Evolutionary Significant Unit (ESU)	A stock that is reproductively isolated from other stocks of the same species and which represents an important part of the evolutionary legacy of the species. An ESU is treated as a species for purposes of listing under the ESA. NMFS uses this designation.
Exclusive Economic Zone (EEZ)	A maritime zone adjacent to the territorial sea that may not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured.
Expended Materials	Those munitions, items, devices, equipment and materials which are uniquely military in nature, and are used and expended in the conduct of the military training and testing mission, such as: sonobuoys, flares, chaff, drones, targets, bathymetry measuring devices and other instrumentation, communications devices, and items used as training substitutes. This definition may also include materials expended (such as propellants, weights, guidance wires) from items typically recovered, such as aerial target drones and practice torpedoes.
Federal Register	The official daily publication for actions taken by the Federal government, such as Rules, Proposed Rules, and Notices of Federal agencies and organizations, as well as Executive Orders and other Presidential documents.
Frequency	Description of the rate of disturbance, or vibration, measured in cycles per second. Cycles per second are usually referred to as Hz, the unit of measure.
Harassment	As defined in this document, harassment is intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering.
High frequency	As defined in this document, frequencies greater than 10 kHz.
Hydrography	The characteristic features (e.g., flow, depth) of bodies of water.
Hydrophone	An underwater receiver used to detect the pressure change caused by sound in the water. That pressure is converted to electrical energy. It can then be translated to something that can be heard by the human ear. Sometimes the detected acoustic pressure is outside the human range of hearing.
Infauna	Animals living within the sediment.
Isobath	A line on a chart or map connecting points of equal depths; bathymetric contour.
Letter of authorization (LOA)	The Marine Mammal Protection Act provides for a "small take authorization" (i.e., letter of authorization) for maritime activities, provided NMFS finds that the takings would be of small numbers (i.e., taking would have a negligible impact on that species or stock), would have no more than a negligible impact on those marine mammal species not listed as depleted, and would not have an unmitigable adverse impact on subsistence harvests of these species.

Term	Definition
Level A harassment	Level A harassment includes any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild. Injury is identified as the destruction or loss of biological tissue. The destruction or loss of biological tissue will result in an alteration of physiological function that exceeds the normal daily physiological variation of the intact tissue.
Level A harassment zone	Extends from an acoustic or impulsive source out to the distance and exposure at which the slightest amount of injury is predicted to occur. The acoustic exposure that produces the slightest degree of injury is therefore the threshold value defining the outermost limit of the Level A harassment zone.
Level B harassment	Level B harassment includes all actions that disturb or are likely to disturb a marine mammal or marine mammal stock in the wild through the disruption of natural 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. Unlike Level A harassment, which is solely associated with physiological effects, both physiological and behavioral effects have the potential to cause Level B harassment.
Level B harassment zone	Begins just beyond the point of slightest injury and extends outward from that point. It includes all animals that may potentially experience Level B harassment. Physiological effects extend beyond the range of slightest injury to a point where slight temporary distortion of the most sensitive tissue occurs, but without destruction or loss of that tissue. The animals predicted to be in this zone experience Level B harassment by virtue of temporary impairment of sensory function (altered physiological function) that can disrupt behavior.
Low frequency	As defined in this document, frequencies less than 1 kilohertz (kHz).
Masking	The obscuring of sounds of interest by interfering sounds, generally at the same frequencies.
Mid-frequency	As defined in this document, frequencies between 1 and 10 kHz.
Mitigation measure	Measures that will minimize, avoid, rectify, reduce, eliminate, or compensate for significant environmental effects.
Munitions (Military)	All ammunition products and components produced or used by or for the U.S. Department of Defense, or the U.S. Armed Services for national defense and security, including military munitions under the control of the Department of Defense, the U.S. Coast Guard, the U.S. Department of Energy, and the National Guard.
Mysticete	Any whale of the suborder Mysticeti having plates of whalebone (baleen plates) instead of teeth. Mysticetes are filter-feeding whales, also referred to as baleen whales, such as blue, fin, gray, and humpback whales.
Notice of intent (NOI)	A written notice published in the Federal Register that announces the intent to prepare an EIS. Also provides information about a proposed federal action, alternatives, the scoping process, and points of contact within the lead federal agency regarding the EIS.
Odontocete	Any toothed whale (without baleen plates) of the suborder Odontoceti such as sperm whales, killer whales, dolphins, and porpoises.
Onset permanent threshold shift (onset PTS)	PTS (defined below) is non-recoverable and, by definition, must result from the destruction of tissues within the auditory system. PTS therefore qualifies as an injury and is classified as Level A harassment under the wording of the Marine Mammal Protection Act. In this EIS/OEIS, the smallest amount of PTS (onset PTS) is taken to be the indicator for the smallest degree of injury that can be measured. The acoustic exposure associated with onset PTS is used to define the outer limit of the Level A harassment zone

Term	Definition
Onset temporary threshold shift (onset TTS)	TTS (defined below) is recoverable and is considered to result from the temporary, non-injurious distortion of hearing-related tissues. In this EIS/OEIS, the smallest measurable amount of TTS (onset TTS) is taken as the best indicator for slight temporary sensory impairment. Because it is considered non-injurious, the acoustic exposure associated with onset TTS is used to define the outer limit of the portion of the Level B harassment zone attributable to physiological effects. This follows from the concept that hearing loss potentially affects an animal's ability to react normally to the sounds around it. Therefore, the potential for TTS qualifies as a Level B harassment that is mediated by physiological effects upon the auditory system.
Ordnance	Explosives, chemicals, pyrotechnics, and similar stores (e.g., bombs, guns and ammunition, flares, smoke, or napalm).
Passive sonar	Detects the sound created by an object (source) in the water. This is a one-way transmission of sound waves traveling through the water from the source to the receiver.
Pelagic	Pelagic is a broad term applied to species that inhabit the open, upper portion of marine waters rather than waters adjacent to land or near the sea floor.
Permanent threshold shift (PTS)	Exposure to high-intensity sound may result in auditory effects such as noise-induced threshold shift, or simply a threshold shift (TS). If the TS becomes a permanent condition, generally as a result of physical injury to the inner ear and hearing loss, it is known as PTS.
Physiological effect	Defined in the EIS/OEIS as a variation in an animal's physiology that results from an anthropogenic acoustic exposure and exceeds the normal daily variation in physiological function.
Ping	Pulse of sound created by a sonar.
Pinger	A pulse generator using underwater sound transmission to relay data such as subject location.
Pinniped	Any member of a suborder (Pinnipedia) of aquatic carnivorous mammals (i.e., seals and sea lions) with all four limbs modified into flippers.
Platform	A vessel, pier, barge, etc. from which test systems can be deployed.
Predation	A biological interaction where a predator organism feeds on another living organism or organisms known as prey. The act of predation results in the ecologically significant death of the prey.
Received level	The level of sound that arrives at the receiver, or listening device (hydrophone). The received level is the source level minus the transmission losses from the sound traveling through the water.
Record of Decision (ROD)	A concise summary of the decision made by the project proponent (e.g., Navy) from the alternatives presented in the Final EIS. The ROD is published in the <i>Federal Register</i> .
Resonance	A phenomenon that exists when an object is vibrated at a frequency near its natural frequency of vibration – the particular frequency at which the object vibrates most readily. The size and geometry of an air cavity determine the frequency at which the cavity will resonate.
Scoping	An early and open process with federal and state agencies and interested parties to identify possible alternatives and the significant issues to be addressed in an EIS.
Sonobuoy	A device launched from an aircraft to determine environmental conditions for determination of best search tactics, to communicate with friendly submarines, and to conduct search, localization, tracking, and, as required, attack of designated hostile platforms. Sonobuoys provide both a deployable acoustical signal source and reception of underwater signals of interest.

Term	Definition
Sound Navigation and Ranging (Sonar)	Any anthropogenic (man-made) or animal (e.g., bats, dolphins) system that uses transmitted acoustic signals and echo returns for navigation, communication, and determining position and bearing of a target. There are two broad types of anthropogenic sonar: active and passive.
Sound pressure level (SPL)	A measure of the root-mean square, or "effective," sound pressure in decibels. SPL is expressed in dB re 1 μ Pa for underwater sound and dB re to 20 μ Pa for airborne sound.
Source level	The sound pressure level of an underwater sound as measured one meter from the source.
Substrate	Any object or material upon which an organism grows or to which an organism is attached.
Tactical Sonar	A category of sonar emitting equipment that includes surface ship and submarine hull-mounted active sonars.
Take	Defined under the MMPA as "harass, hunt, capture, kill or collect, or attempt to harass, hunt, capture, kill or collect."
Temporary threshold shift (TTS)	Exposure to high-intensity sound may result in auditory effects such as noise-induced threshold shift, or simply a threshold shift (TS). If the TS recovers after a few minutes, hours, or days it is known as TTS.
Threatened species	Any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range (ESA §3[20]).
Transmission loss	Energy losses that occur as the pressure wave, or sound, travels through the water. The associated wavefront diminishes due to the spreading of the sound over an increasingly larger volume and the absorption of some of the energy by water.

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