Subsistence Mitigation Measures

Statoil plans to introduce the following mitigation measures, plans and programs to potentially affected subsistence groups and communities. These measures, plans, and programs have been effective in past seasons of work in the Arctic and were developed in past consultations with these communities. These measures, plans, and programs will be implemented by Statoil during its 2010 open water marine seismic survey in the Chukchi Sea to monitor and mitigate potential impacts to subsistence users and resources. The mitigation measures Statoil has adopted and will implement during 2010 are listed and discussed below.

Statoil will not be entering the Chukchi Sea until early August, so there will be no potential conflict with spring bowhead whale or beluga subsistence whaling in the polynya zone. Statoil's seismic survey area is ~100 mi (~ 161 km) northwest of Wainwright which reduces the potential impact to subsistence hunting activities occurring along the Chukchi Sea coast.

The communication center in Wainwright will be jointly funded by Statoil and other operators, and Statoil will routinely call the communication center according to the established protocol while in the Chukchi Sea. Statoil plans to have one major crew change which will take place in Nome, AK, and will not involve the use of helicopters. Statoil does have a contingency plan for a potential transfer of a small number of crew via ship-to-shore vessel at Wainwright. If this should become necessary, the Wainwright communications center will be contacted to determine the appropriate vessel route and timing to avoid potential conflict with subsistence users.

Unmitigable Adverse Impact Analysis and Preliminary Determination

NMFS has preliminarily determined that Statoil's proposed 2010 open water marine seismic survey in the Chukchi Sea will not have an unmitigable adverse impact on the availability of species or stocks for taking for subsistence uses. This preliminary determination is supported by information contained in this document and Statoil's draft POC. Statoil has adopted a spatial and temporal strategy for its Chukchi Sea operations that should minimize impacts to subsistence hunters. Statoil will enter the Chukchi Sea far offshore, so as to not interfere with July hunts in the Chukchi Sea villages. After the close of the July beluga whale hunts in the Chukchi Sea villages, very little whaling occurs in Wainwright, Point Hope, and Point Lay. Although the fall bowhead whale hunt in Barrow will occur while Statoil is still operating (mid- to late September to October), Barrow is approximately 150 mi (241 km) east of the eastern boundary of the proposed marine seismic survey site. Based on these factors, Statoil's Chukchi Sea seismic survey is not expected to interfere with the fall bowhead harvest in Barrow. In recent years, bowhead whales have occasionally been taken in the fall by coastal villages along the Chukchi coast, but the total number of these animals has been small.

Adverse impacts are not anticipated on sealing activities since the majority of hunts for seals occur in the winter and spring, when Statoil will not be operating. Additionally, most sealing activities occur much closer to shore than Statoil's proposed marine seismic survey area.

Based on the measures described in Statoil's Draft POC, the proposed mitigation and monitoring measures (described earlier in this document), and the project design itself, NMFS has determined preliminarily that there will not be an unmitigable adverse impact on subsistence uses from Statoil's open water marine seismic survey in the Chukchi Sea.

Endangered Species Act (ESA)

There are three marine mammal species listed as endangered under the ESA with confirmed or possible occurrence in the proposed project area: the bowhead, humpback, and fin whales. NMFS' Permits, Conservation and Education Division has initiated consultation with NMFS' Protected Resources Division under section 7 of the ESA on the issuance of an IHA to Statoil under section 101(a)(5)(D) of the MMPA for this activity. Consultation will be concluded prior to a determination on the issuance of an IHA.

National Environmental Policy Act (NEPA)

NMFS is currently preparing an Environmental Assessment, pursuant to NEPA, to determine whether or not this proposed activity may have a significant effect on the human environment. This analysis will be completed prior to the issuance or denial of the IHA.

Proposed Authorization

As a result of these preliminary determinations, NMFS proposes to authorize the take of marine mammals incidental to Statoil's 2010 open water seismic survey in the Chukchi Sea, Alaska, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated.

Dated: June 2, 2010.

James H. Lecky,

Director, Office of Protected Resources, National Marine Fisheries Service.

[FR Doc. 2010–13753 Filed 6–7–10; 8:45 am]

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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648–XT25

Taking of Marine Mammals Incidental to Specified Activities; U.S. Marine Corps Training Exercises at Air Station Cherry Point

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; proposed incidental harassment authorization; request for comments.

SUMMARY: NMFS has received an application from the U.S. Marine Corps (USMC) requesting authorization to take marine mammals incidental to various training exercises at Marine Corps Air Station (MCAS) Cherry Point Range Complex, North Carolina. The USMC's activities are considered military readiness activities pursuant to the Marine Mammal Protection Act (MMPA), as amended by the National Defense Authorization Act (NDAA) for Fiscal Year 2004. Pursuant to the MMPA, NMFS is requesting comments on its proposal to issue an incidental harassment authorization (IHA) to the USMC to take bottlenose dolphins (*Tursiops truncatus*), by Level B harassment only, from specified activities.

DATES: Comments and information must be received no later than July 8, 2010.

ADDRESSES: Comments on the application should be addressed to Michael Payne, Chief, Permits, Conservation and Education Division, Office of Protected Resources, National Marine Fisheries Service, 1315 East-West Highway, Silver Spring, MD 20910–3225. The mailbox address for providing e-mail comments is *PR1.0648–XT25@noaa.gov.* NMFS is not responsible for e-mail comments sent to addresses other than the one provided here. Comments sent via e-mail, including all attachments, must not exceed a 10-megabyte file size.

Instructions: All comments received are a part of the public record and may be posted to *http://www.nmfs.noaa.gov/pr/permits/incidental.htm* without change. All Personal Identifying Information (for example, name, address, *etc.*) voluntarily submitted by the commenter may be publicly accessible. Do not submit Confidential Business Information or otherwise sensitive or protected information.

A copy of the application containing a list of the references used in this document may be obtained by writing to the address specified above, telephoning the contact listed below (*see* **FOR FURTHER INFORMATION CONTACT**), or visiting the Internet at: *http://www.nmfs.noaa.gov/pr/permits/incidental.htm.* The following associated document is also available at the same Internet address: *Environmental Assessment MCAS Cherry Point Range Operations* (USMC 2009). Documents cited in this notice may also be viewed, by appointment, during regular business hours, at the aforementioned address.

FOR FURTHER INFORMATION CONTACT: Jaclyn Daly, Office of Protected Resources, NMFS, (301) 713–2289.

SUPPLEMENTARY INFORMATION:

Background

Sections 101(a)(5)(A) of the MMPA (16 U.S.C. 1361 *et seq.*) direct the Secretary of Commerce to allow, upon request, the incidental, but not intentional, taking of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) if certain findings are made and regulations are issued or, if the taking is limited to harassment, notice of a proposed authorization is provided to the public for review.

Authorization for incidental takings may be granted if NMFS finds that the taking will have a negligible impact on the species or stock(s), will not have an unmitigable adverse impact on the availability of the species or stock(s) for certain subsistence uses, and if the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such taking are set forth. NMFS has defined "negligible impact" in 50 CFR 216.103 as: "an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival."

Section 101(a)(5)(D) of the MMPA established an expedited process by which citizens of the United States can apply for an authorization to incidentally take small numbers of marine mammals by harassment. Section 101(a)(5)(D) establishes a 45-day time limit for NMFS review of an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of marine mammals. Within 45 days of the close of the comment period, NMFS must either issue or deny the authorization.

The NDAA (Pub. L. 108–136) removed the "small numbers" and "specified geographical region" limitations and amended the definition of "harassment" as it applies to a "military readiness activity" to read as follows (Section 3(18)(B) of the MMPA):

(i) Any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild [Level A Harassment]; or (ii) Any act that disturbs or is likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of natural behavioral patterns, including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering, to a point where such behavioral patterns are abandoned or significantly altered [Level B Harassment].

Summary of Request

On August 6, 2009, NMFS received an application from the USMC requesting an IHA for the harassment of Atlantic bottlenose dolphins (*Tursiops truncatus*) incidental to air-to-surface and surface-to-surface training exercises conducted around two bombing targets (BTs) within southern Pamlico Sound, North Carolina, at MCAS Cherry Point. NMFS requested additional information regarding the specified activities and received responses from the USMC on October 29, 2009, completing the application.

Weapon delivery training would occur at two BTs: Brant Island Target (BT–9) and Piney Island Bombing Range (BT–11). Training at BT–9 would involve air-to-surface (from aircraft to in-water targets) and surface-to-surface (from vessels to in-water targets) warfare training, including bombing, strafing, special (laser systems) weapons; surface fires using non-explosive and explosive ordnance; and mine laying exercises (inert). Training at BT–11 would involve air-to-surface exercises to provide training in the delivery of conventional (non-explosive) and special (laser systems) weapons. Surface-to-surface training by small military watercraft would also be executed here. The types of ordnances proposed for use at BT–9 and BT–11 include small arms, large arms, bombs, rockets, missiles, and pyrotechnics. All munitions used at BT–11 are inert, practice rounds. No live firing occurs at BT–11. Training for any activity may occur year-round. Active sonar is not a component of these specified training exercises; therefore, discussion of marine mammal harassment from active sonar operations is not included within this notice.

Description of the Specified Activity

The USMC is requesting authorization to harass bottlenose dolphins from ammunition firing conducted at two BTs within MCAS Cherry Point. The BTs are located at the convergence of the Neuse River and Pamlico Sound, North Carolina. BT–9 is a water-based target located approximately 52 km (28 nautical miles [nm]) northeast of MCAS Cherry Point. The BT–9 target area ranges in depth from 1.2 m to 6.1 m, with the shallow areas concentrated along the Brandt Island Shoal (which runs down the middle of the restricted area in a northwest to southeast orientation). The target itself consists of three ship hulls grounded on Brant Island Shoals, located approximately 4.8 km (3 miles [mi]) southeast of Goose Creek Island. Inert (non-explosive) ordnance up to 454 kilograms (kg) (1,000 lbs) and live (explosive) ordnance up to 45.4 kg (100 lbs) TNT equivalent, including ordnance released during strafing, are authorized for use at this target range. The target is defined by a 6 statute-mile (SM) diameter prohibited area designated by the U.S. Army Corps of Engineers, Wilmington District (33 CFR 334.420). Non-military vessels are not permitted within the prohibited area, which is delineated by large signs located on pilings surrounding the perimeter of the BT. BT–9 also provides a mining exercise area; however, all mine exercises are simulation only and do not involve detonations. BT–9 standard operating procedures limit live ordnance deliveries to a maximum explosive weight of 100 lbs TNT equivalent. Based on 2007 data, the USMC would conduct approximately 1,539 aircraft-based and 165 vessel-based sorties, annually, at BT–9. The standard sortie consists of two aircraft per bombing run or an average of two and maximum of six vessels.

BT–11 is a 50.6 square kilometers (sq km) (19.5 square miles [sq mi]) complex of land- and water-based targets on Piney Island. The BT–11 target area ranges in depth from 0.3 m along the shoreline to 3.1 m in the center of Rattan Bay (BA 2001). The in-water stationary targets of BT–11 consist of a barge and patrol (PT) boat located in roughly the center of Rattan Bay. The barge target is approximately 135 ft by 40 ft in dimension. The PT boat is approximately 110 ft by 35 ft in dimension. Water depths in the center of Rattan Bay are estimated as 2.4 to 3 m (8 to 10 ft) with bottom depths ranging from 0.3 to 1.5 m (1 to 5 ft) adjacent to the shoreline of Piney Island. A shallow ledge, with substrate expected to be hard-packed to hard bottom, surrounds Piney Island. No live firing occurs at BT–11; all munitions used are inert, non-explosive practice rounds. Only 36 percent of all munitions fired at BT–11 occur over water; the remaining munitions are fired to land based targets on Piney Island. Based on 2007 data, the USMC would conduct approximately 6,727 aircraft-based and 51 vessel-based sorties, annually, at BT–11.

All inert and live-fire exercises at MCAS Cherry Point ranges are conducted so that all ammunition and other ordnances strike and/or fall on the land or water based target or within the existing danger zones or water restricted areas. A danger zone is a defined water area that is closed to the public on an intermittent or full-time basis for use by military forces for hazardous operations such as target practice and ordnance firing. A water restricted area is a defined water area where public access is prohibited or limited in order to provide security for Government property and/or to protect the public from the risks of injury or damage that could occur from the government's use of that area (33 CFR 334.2). Surface danger zones are designated areas of rocket firing, target practice, or other hazardous operations (33 CFR 334.420). The surface danger zone (prohibited area) for BT–9 is a 4.8 km radius centered on the south side of Brant Island Shoal. The surface danger zone for BT–11 is a 2.9 km radius centered on a barge target in Rattan Bay.

According to the application, the USMC is requesting take of marine mammals incidental to specified activities at MCAS Cherry Point Range Complex, located within Pamlico Sound, North Carolina. These activities include gunnery; mine laying; bombing; or rocket exercises and are classified into two categories here based on delivery method: (1) Surface-to-surface gunnery and (2) air-to-surface bombing. Exercises may occur year round, day or night (approximately 15 percent of training occurs at night).

Surface-to-Surface Gunnery Exercises

Surface-to-surface fires are fires from boats at sea to targets at sea. These can be direct (targets are within sight) or indirect (targets are not within sight). Gunnery exercise employing only direct fire is the only category of surface-to-surface activity currently conducted within the MCAS Cherry Point BTs. An average of two and maximum of six small boats (24–85 ft), or fleet of boats, typically operated by Special Boat Team personnel, use a machine gun to attack and disable or destroy a surface target that simulates another ship, boat, swimmer, floating mine or near shore land targets. Vessels travel between 0–20 kts with an average of two vessels actually conducting surface-to-surface firing activities. Typical munitions are 7.62 millimeter (mm) or .50 caliber (cal) machine guns; and/or 40 mm Grenade machine guns. This exercise is usually a live-fire exercise, but at times blanks may be used so that the boat crews can practice their ship handling skills. The goal of training is to hit the targets; however, some munitions may bounce off the targets and land in the water or miss the target entirely. Additionally, G911 Concussion hand grenades (inert and live) are used; however, these are not aimed at targets, as the goal is to learn how to throw them into the water.

The estimated amount of munitions expended at BT–9 and BT–11 during this training can be found in Table 1 below. In 2007, a total of 216 boat sorties were conducted at BT–9 and BT–11 year round with equal distribution of training effort throughout the seasons. Live fires constitute approximately 90 percent of all surface-to-surface gunnery events. The majority of sorties originated and practiced at BT–9 as no live fire is conducted at BT–11. The USMC has indicated a comparable number of sorties would occur throughout the IHA timeframe. There is no specific schedule associated with the use of ranges by the small boat teams. However, exercises tend to be scheduled for 5-day blocks with exercises at various times throughout that timeframe. There is no specific time of year or month training occurs as variables such as deployment status, range availability, and completion of crew specific training requirements influence schedules.

A number of different types of boats are used during surface-to-surface exercises depending on the unit using the boat and their mission and include versions of Small Unit River Craft, Combat Rubber Raiding Craft, Rigid Hull Inflatable Boats, Patrol Craft. They are inboard or outboard, diesel or gasoline engines with either propeller or water jet propulsion. Boat crews approach, at a maximum of 20 kts, and engage targets simulating other boats, swimmers, floating mines, or near shore land targets with 7.62 mm or .50 cal machine guns; 40 mm grenade machine guns; or M3A2 Concussion hand grenades (approximately 200, 800, 10, and 10 rounds respectively). Vessels typically travel in linear paths and do not operate erratically. Other vessels may be located within the BTs; however, these are support craft and do not participate in munitions expenditures. The purpose of the support craft is to remotely control High Speed Maneuvering Surface Targets (HSMSTs) or to conduct maintenance on electronic equipment located in the towers at BT–9. Support craft are typically anchored or tied to marker pilings during HSMST operations or tied to equipment towers. When underway, vessels do not typically travel faster than 12–18 kts or in an erratic manner.

TABLE 1—TYPE AND AMOUNT OF MUNITIONS EXPENDED AT BT–9 AND BT–11 DURING SURFACE-TO-SURFACE EXERCISES

Range	Annual No. of sorties [1]	Munitions type	Munitions expended annually
BT–9	165	5.56 mm	1,468
		7.62 mm	218,500
		.50 cal	166,900
		40 mm Grenade—Inert	15,734
		40 mm Grenade—Live (HE)	9,472
		G911 Grenade	144
BT–11	51	7.62 mm	44,100
		.40 cal	4,600
		40 mm Grenade—Inert	1,517

TABLE 1—TYPE AND AMOUNT OF MUNITIONS EXPENDED AT BT–9 AND BT–11 DURING SURFACE-TO-SURFACE EXERCISES—Continued

Range	Annual No. of sorties [1]	Munitions type	Munitions expended annually
		40 mm Illumination—Inert	9

[1] Sorties are from FY 2007 CURRS data.

Air-to-Surface

Air-to-surface training involves ordnance delivered from aircraft and aimed at targets on the water's surface or on land in the case of BT–11. A description of the types of targets used at MCAS Cherry Point is provided in the section on BTs above. There are four types of air-to-surface activities conducted within the MCAS Cherry Point BTs: Mine laying; bombing; gunnery or rocket exercises which are carried out via fixed wing or rotary wing aircraft.

Mine Laying Exercises

Mine Warfare (MIW) includes the strategic, operational, and tactical use of mines and mine countermine measures. MIW is divided into two basic subdivisions: (a) The laying of mines to degrade the enemy's capabilities to wage land, air, and maritime warfare, and (b) the countering of enemy-laid mines to permit friendly maneuver or use of selected land or sea areas (DoN, 2007). MCAS Cherry Point would only engage in mine laying exercises as described below. No detonations of any mine device are involved with this training.

During mine laying, a fixed-wing or maritime patrol aircraft (P–3 or P–8) typically drops a series of about four inert mine shapes in an offensive or defensive pattern, making multiple passes along a pre-determined flight azimuth, and dropping one or more shapes each time. Mine simulation shapes include MK76, MK80 series, and BDU practice bombs ranging from 25 to 2,000 pounds in weight. There is an attempt to fly undetected to the area where the mines are laid with either a low or high altitude tactic flight. The shapes are scored for accuracy as they enter the water and the aircrew is later debriefed on their performance. The training shapes are inert (no detonations occur) and expendable. Mine laying operations are regularly conducted in the water in the vicinity of BT–9.

Bombing Exercises

The purpose of bombing exercises is to train pilots in destroying or disabling enemy ships or boats. During training, fixed wing or rotary wing aircraft deliver bombs against surface maritime targets at BT–9 or BT–11, day or night, using either unguided or precision-guided munitions. Unguided munitions include MK–76 and BDU–45 inert training bombs, and MK–80 series of inert bombs (no cluster munitions authorized). Precision-guided munitions consist of laser-guided bombs (inert) and laser-guided training rounds (inert). Typically, two aircraft approach the target (principally BT–9) from an altitude of approximately 914 m (3,000 ft) up to 4,572 m (15,000 ft) and, when on an established range, the aircraft adhere to designated ingress and egress routes. Typical bomb release altitude is 914 m (3,000 ft) for unguided munitions or above 4,572 m (15,000 ft) and in excess of 1.8 km (1 nm) for precision-guided munitions. However, the lowest minimum altitude for ordnance delivery (inert bombs) would be 152 m (500 ft).

Onboard laser designators or laser designators from a support aircraft or ground support personnel are used to illuminate certified targets for use when using laser guided weapons. Due to target maintenance issues, live bombs have not been dropped at the BT–9 targets for the past few years although these munitions are authorized for use. For the effective IHA timeframe, no live bombs would be utilized. Live rockets and grenades; however, have been expended at BT–9.

Air-to-Surface bombing exercises have the potential to occur on a daily basis. The standard sortie consists of two aircraft per bombing run. The frequency of these exercises is dependent on squadron level training requirements, deployment status, and range availability; therefore, there is no set pattern or specific time of year or month when this training occurs. Normal operating hours for the range are 0800–2300, Monday through Friday; however, the range is available for use 365 days per year.

Rocket Exercises

Rocket exercises are carried out similar to bombing exercises. Fixed- and rotary-wing aircraft crews launch rockets at surface maritime targets, day and night, to train for destroying or disabling enemy ships or boats. These operations employ 2.75-inch and 5-inch rockets.

The average number of rockets delivered per sortie is approximately 14. As with the bombing exercise, there is no set level or pattern of amount of sorties conducted.

Gunnery Exercises

During gunnery training, fixed- and rotary-wing aircraft expend smaller munitions targeted at the BTs with the purpose of hitting them. However, some small arms may land in the water. Rotary wing exercises involve either CH–53, UH–1, CH–46, MV–22, or H–60 rotary-wing aircraft with mounted 7.62 mm or .50 cal machine guns. Each gunner expends approximately 800 rounds of 7.62 mm and 200 rounds of .50 cal ammunition in each exercise. These may be live or inert.

Fixed wing gunnery exercises involve the flight of two aircraft that begin to descend to the target from an altitude of approximately 914 meters (m) (3,000 feet [ft]) while still several miles away. Within a distance of 1,219 m (4,000 ft) from the target, each aircraft fires a burst of approximately 30 rounds before reaching an altitude of 305 m (1,000 ft), then breaks off and repositions for another strafing run until each aircraft expends its exercise ordnance allowance of approximately 250 rounds. In total, about 8–12 passes are made by each aircraft per exercise. Typically these fixed wing exercise events involve an F/A–18 and AH–1 with Vulcan M61A1/A2, 20 mm cannon; AV–8 with GAU–12, 25 mm cannon.

Munition Descriptions

A complete list of the ordnance authorized for use at BT–9 and BT–11 can be found in Tables 2 and 3, respectively. There are several varieties and net explosive weights (for live munition used at BT–9) can vary according to the variety. All practice bombs are inert and used to simulate the same ballistic properties of service type bombs. They are manufactured as either solid cast metal bodies or thin sheet metal containers. Since practice bombs contain no explosive filler, a practice bomb signal cartridge (smoke) is used for visual observation of weapon target impact. Practice bombs provide a low cost training device for pilot and ground handling crews. Due to the relatively small amount of explosive material in practice bombs (small signal charge), the availability of ranges for training is greatly increased.

When a high explosive detonates, it is converted almost instantly into a gas at very high pressure and temperature. Under the pressure of the gases thus generated, the weapon case expands and breaks into fragments. The air surrounding the casing is compressed and shock (blast) wave is transmitted into it. Typical initial values for a high-explosive weapon are 200 kilobars of pressure (1 bar = 1 atmosphere) and 5,000 degrees Celsius. There are five types of explosive sources used at BT–9: 2.75″ Rocket High Explosives, 5″ Rocket High Explosives, 30 mm High Explosives, 40 mm High Explosives, and G911 grenades. No live munitions are used at BT–11.

TABLE 2—DESCRIPTION OF MUNITIONS USED AT BT–9

Ordnance	Description	Net explosive weight
MK 76 Practice Bomb (inert)	25-pound teardrop-shaped cast metal bomb, with a bore tube for installation of a signal cartridge.	(of signal cartridge) varies, maximum 0.083800 lbs.
BDU 33 Practice Bomb (inert)	Air Force MK 76 practice bomb	same as above.
BDU 48 Practice Bomb (inert)	10-pound metal cylindrical bomb body with a bore tube for installation of a signal cartridge.	same as above.
BDU 45 Practice Bomb (inert)	500-pound metal bomb either sand or water filled. Two signal cartridges.	(of signal cartridges) total 0.1676 lbs.
BDU 50 Practice Bomb (inert)	500-pound metal bomb either sand or water filled. Two signal cartridges.	same as above.
MK 81 Practice Bomb (inert)	250-pound bomb	0
MK 82 Practice Bomb (inert)	500-pound bomb	0
MK 83 Practice Bomb (inert)	1000-pound bomb configured like BDU 45	0.1676 lbs.
MK 84 Practice Bomb (inert) (special exception use only).	2000-pound bomb configured like BDU 45	0.1676 lbs.
2.75-inch (inert)	Unguided 2.75 inch diameter rocket	0
5-inch Zuni (inert)	Unguided 5 inch diameter rocket	0
5-inch Zuni (live)	Unguided 5-inch diameter rocket	15 lbs.
2.75wp (inert)	2.75-inch rocket containing white phosphorous	0
2.75HE	High Explosive, 2.75 inch rocket	4.8 lbs.
0.50 cal (inert)	Machine gun rounds	0
7.62 mm (inert)		
20 mm (inert)		
25 mm (inert)		
30 mm (inert)		
40 mm (inert)		
25 mm HE (live)	High Explosive Incendiary, Live machine gun rounds	0.269 lbs.
Self Protection Flare	Aerial flare	0
Chaff	18-pound chaff canister	0
LUU–2	30-pound high intensity illumination flare	0
Laser Guided Training Round (LGTR) (inert)	89-pound inert training bomblet	0

TABLE 3—DESCRIPTION OF MUNITIONS USED AT BT–11

Ordnance	Description
MK 76 Practice Bomb	25-pound teardrop-shaped cast metal bomb body, with a bore tube for installation of a signal cartridge.
BDU 33 Practice Bomb	Air Force designation for MK 76 practice bomb.
BDU 48 Practice Bomb	10-pound metal cylindrical bomb body with a bore tube for installation of a signal cartridge.
BDU 45 Practice Bomb	500-pound metal bomb body either sand or water filled. Configured with either low drag conical tail fins or high drag tail fins for retarded weapons delivery. Two signal cartridges installed.
MK 81 Practice Bomb	250-pound inert bomb.
MK 82 Practice Bomb	500-pound inert bomb.
2.75-inch	Unguided 2.75 inch diameter rocket.
5-inch Zuni	5 inch diameter rocket.
WP-2.75-inch	White phosphorous 7-pound rocket.
0.50 cal	Inert machine gun rounds.
7.62 mm	
5.56 mm	
20 mm	
30 mm	
40 mm	
TOW	Wire guided 56-pound anti-tank missile.
Self Protection Flare	Aerial flare.
SMD SAMS	1.5-pound smoking flare.
LUU–2	30-pound high-intensity illumination flare.
Laser Guided Training Round (LGTR).	89-pound inert training bomblet.

The amounts of all ordnance to be expended at BT–9 and BT–11 (both surface-to-surface and air-to-surface) are 897,932 and 1,109,955 rounds, respectively (*see* Table 4 and 5 below).

TABLE 4—AMOUNT OF LIVE AND INERT MUNITIONS EXPENDED AT BT–9 PER YEAR

Proposed munitions [1]	Proposed total number of rounds	Proposed number of explosive rounds having an impact on the water	Net explosive weight (lb)
Small Arms Rounds Excluding .50 cal	525,610	N/A	N/A
.50 Cal	257,067	N/A	N/A
Large Arms Rounds—Live	12,592	30 mm HE: 3,120	0.1019
		40 mm HE: 9,472	0.1199
Large Arms Rounds—Inert	93,024	N/A	N/A
Rockets—Live	241	2.75″ Rocket: 184	4.8
		5″ Rocket: 57	15.0
Rockets—Inert	703	N/A	N/A
Bombs and Grenades—Live	144	G911 Grenade: 144	0.5
Bombs and Grenades—Inert	4,055	N/A	N/A
Pyrotechnics	4,496	N/A	N/A
Total	897,932	12,977	N/A

[1] Munitions may be expended from aircraft or small boats.

TABLE 5—AMOUNT OF INERT MUNITIONS EXPENDED AT BT–11

Proposed munitions [1]	Proposed total number of rounds [2]
Small Arms Rounds Excluding .50 Cal	507,812
.50 Cal	326,234
Large Arms Rounds	240,334
Rockets	4,549
Bombs and Grenades	22,114
Pyrotechnics	8,912
Total	1,109,955

[1] Munitions may be expended from aircraft or small boats.
[2] Munitions estimated using FY 2007 CURRS data on a per sortie-operation basis.

Description of Marine Mammals in the Area of the Specified Activity

Forty marine mammal species occur within the nearshore and offshore waters of North Carolina; however, the majority of these species are solely oceanic in distribution. Only one marine mammal species, the bottlenose dolphin, has been repeatedly sighted in Pamlico Sound, while an additional species, the endangered West Indian manatee (*Trichechus manatus*), has been sighted rarely (Lefebvre *et al.,* 2001; DoN 2003). The U.S. Fish and Wildlife Service oversees management of the manatee; therefore, authorization to harass manatees would not be included in any NMFS' authorization and will not be discussed further.

No sightings of the endangered North Atlantic right whale (*Eubalaena glacialis*) or other large whales have been observed within Pamlico Sound or in vicinity of the BTs (Kenney 2006). No suitable habitat exists for these species in the shallow Pamlico Sound or BT vicinity; therefore, whales would not be affected by the specified activities and will not be discussed further. Other dolphins, such as Atlantic spotted (*Stenella frontalis*) and common dolphins (*Delphinus delphis*), are oceanic in distribution and do not venture into the shallow, brackish waters of southern Pamlico Sound. Therefore, the specified activity has the potential to affect one marine mammal species under NMFS' jurisdiction: the bottlenose dolphin.

Coastal (or nearshore) and offshore stocks of bottlenose dolphins in the Western North Atlantic can be distinguished by genetics, diet, blood characteristics, and outward appearance (Duffield *et al.,* 1983; Hersh and Duffield, 1990; Mead and Potter, 1995; Curry and Smith, 1997). Initially, a single stock of coastal morphotype bottlenose dolphins was thought to migrate seasonally between New Jersey (summer months) and central Florida based on seasonal patterns in strandings during a large scale mortality event occurring during 1987–1988 (Scott *et al.,* 1988). However, re-analysis of stranding data (McLellan *et al.,* 2003) and extensive analysis of genetic, photo-identification, satellite telemetry, and stable isotope studies demonstrate a complex mosaic of coastal bottlenose dolphin stocks (NMFS 2001) which may be migratory or resident (they do not migrate and occur within an area year round). Four out of the seven designated coastal stocks may occur in North Carolina waters at some part of the year: the Northern Migratory stock (NM; winter); the Southern Migratory stock (SM; winter); the Northern North Carolina Estuarine stock (NNCE; resident, year round); and the more recently identified Southern North Carolina stock (SNC; resident, year round). Stable isotope depleted oxygen signature (hypoxic conditions routinely develops during summer in North Carolina waters) (Cortese, 2000), satellite telemetry, and photo-identification (NMFS, 2001) support stock structure analysis. Dolphins encountered at the BTs likely belong to the NNCE and SNC stock; however, this may not always be the case. NMFS' 2008 stock assessment report provides further detail on stock delineation. All stocks discussed here are considered depleted under the MMPA (Waring *et al.,* 2007).

NMFS provides abundance estimates for the four aforementioned migratory and resident coastal stocks in its 2008 stock assessment report; however, these estimates are based solely from summer aerial surveys. The size of the NNCE stock is technically considered "unknown"; however, Read *et al.,* (2003) provided a population estimate of 919 (95 percent CI 730–1,190) (Waring *et al.,* 2009). The population estimate for the SNC stock is 4,818, respectively. From July 2004 through April 2006, the NMFS' SEFSC conducted 41 aerial surveys to document the seasonal distribution and estimated density of sea turtles and dolphins within Core Sound and portions of Pamlico Sound, and coastal waters extending one mile offshore (Goodman *et al.,* 2007). Pamlico Sound was divided into two survey areas: western (encompassing BT–9 and BT–11) and eastern (including Core Sound and the eastern portion of restricted air space R–5306). In total, 281 dolphins were sighted in the western range. To account for animals likely missed during sightings (*i.e.,* those below the surface), Goodman *et al.* (2007) estimate that, in reality, 415 dolphins were present. Densities for bottlenose dolphins in the western part of Pamlico Sound were calculated to be 0.0272/km² in winter; 0.2158/km² in autumn; 0.0371/km² in summer; and 0.0946/km² in summer (Goodman *et al.,* 2007). Dolphins were sighted throughout the entire range when mean sea surface temperature (SST) was 7.60 °C to 30.82 °C, with fewer dolphins sighted as water temperatures increased. Like in Mayer (2003), dolphins were found in higher numbers around BT–11, a range where no live firing occurs.

In 2000, Duke University Marine Lab (DUML), conducted a boat-based mark-recapture survey throughout the estuaries, bays and sounds of North Carolina (Read *et al.,* 2003). This summer survey yielded a dolphin density of 0.183/km² (0.071 mi;²) based on an estimate of 919 dolphins for the northern inshore waters divided by an estimated 5,015 km² (1,936 mi²) survey area. Additionally, from July 2002–June 2003, the USMC supported DUML to conduct dolphin surveys specifically in and around BT–9 and BT–11. During these surveys, one sighting in the restricted area surrounding BT–9 and two sightings in proximity to BT–11 were observed, as well as seven sightings in waters adjacent to the BTs. In total, 276 bottlenose dolphins were sighted ranging in group size from two to 70 animals with mean dolphin density in BT–11 more than twice as large as the density of any of the other areas; however, the daily densities were not significantly different (Maher, 2003). Estimated dolphin density at BT–9 and BT–11 based on these surveys were calculated to be 0.11 dolphins/km², and 1.23 dolphins/km², respectively, based on boat surveys conducted from July 2002 through June 2003 (excluding April, May, Sept. and Jan.). However, the USMC choose to estimate take of dolphins based on the higher density reported from the summer 2000 surveys (0.183/km²). Although the aerial surveys were conducted year round and therefore provide for seasonal density estimates, the average year-round density from the aerial surveys is 0.0936, lower than the 0.183/km² density chosen to calculate take for purposes of this MMPA authorization. Additionally, Goodman *et al.* (2007) acknowledged that boat based density estimates may be more accurate than the uncorrected estimates derived from the aerial surveys.

In Pamlico Sound, bottlenose dolphins concentrate in shallow water habitats along shorelines, and few, if any, individuals are present in the central portions of the sounds (Gannon, 2003; Read *et al.,* 2003a, 2003b). The dolphins utilize shallow habitats, such as tributary creeks and the edges of the Neuse River, where the bottom depth is less than 3.5 m (Gannon, 2003). Fine-scale distribution of dolphins seems to relate to the presence of topography or vertical structure, such as the steeply-sloping bottom near the shore and oyster reefs, which may be used to facilitate prey capture (Gannon, 2003). Results of a passive acoustic monitoring effort conducted from 2006–2007 by Duke University researchers validated this information. Vocalizations of dolphins in the BT–11 vicinity were higher in August and September than vocalization detection at BT–9, an open water area (Read *et al.,* 2007). Additionally, detected vocalizations of dolphins were more frequent at night for the BT–9 area and during early morning hours at BT–11.

Unlike migrating whales which display strong temporal foraging and mating/birthing periods, many bottlenose dolphins in Pamlico Sound are residents and mate year round. However, dolphins in the southeast U.S. do display some reproductive seasonality. Based on neonate stranding records, sighting data, and births by known females, the populations of dolphins that frequent the North Carolina estuarine waters have calving peaks in spring but calving continues throughout the summer and is followed by a smaller number of fall births (Thayer *et al.,* 2003).

Bottlenose dolphins can typically hear within a broad frequency range of 0.04 to 160 kHz (Au, 1993; Turl, 1993). Electrophysiological experiments suggest that the bottlenose dolphin brain has a dual analysis system: one specialized for ultrasonic clicks and another for lower-frequency sounds, such as whistles (Ridgway, 2000). Scientists have reported a range of highest sensitivity between 25 and 70 kHz, with peaks in sensitivity at 25 and 50 kHz (Nachtigall *et al.,* 2000). Recent research on the same individuals indicates that auditory thresholds obtained by electrophysiological methods correlate well with those obtained in behavior studies, except at some lower (10 kHz) and higher (80 and 100 kHz) frequencies (Finneran and Houser, 2006).

Sounds emitted by bottlenose dolphins have been classified into two broad categories: pulsed sounds (including clicks and burst-pulses) and narrow-band continuous sounds (whistles), which usually are frequency modulated. Clicks have a dominant frequency range of 110 to 130 kiloHertz (kHz) and a source level of 218 to 228 dB re 1 μPa (peak-to-peak) (Au, 1993) and 3.4 to 14.5 kHz at 125 to 173 dB re 1 μPa (peak-to-peak) (Ketten, 1998). Whistles are primarily associated with communication and can serve to identify specific individuals (*i.e.,* signature whistles) (Caldwell and Caldwell, 1965; Janik *et al.,* 2006). Up to 52 percent of whistles produced by bottlenose dolphin groups with mother-calf pairs can be classified as signature whistles (Cook *et al.,* 2004). Sound production is also influenced by group type (single or multiple individuals), habitat, and behavior (Nowacek, 2005). Bray calls (low-frequency vocalizations; majority of energy below 4 kHz), for example, are used when capturing fish, specifically sea trout (Salmo trutta) and Atlantic salmon (Salmo salar), in some regions (*i.e.,* Moray Firth, Scotland) (Janik, 2000). Additionally, whistle production has been observed to increase while feeding (Acevedo-Gutiérrez and Stienessen, 2004; Cook *et al.,* 2004).

Potential Effects on Marine Mammals

As mentioned previously, with respect to military readiness activities, Section 3(18)(B) of the MMPA defines "harassment" as: (i) Any act that injures or has the significant potential to injure a marine mammal or marine mammal stock in the wild [Level A Harassment]; or (ii) any act that disturbs or is likely to disturb a marine mammal or marine mammal stock in the wild by causing disruption of natural behavioral patterns, including, but not limited to, migration, surfacing, nursing, breeding, feeding, or sheltering, to a point where such behavioral patterns are abandoned or significantly altered [Level B Harassment].

According the application, the USMC has concluded that harassment to marine mammals may occur incidental to munitions firing noise and pressure at the BTs. These military readiness activities would result in increased noise levels, explosions, and munition debris within bottlenose dolphin habitat. NMFS also considered the potential for harassment from vessel and aircraft operation. The USMC's and NMFS' analysis of potential impacts from these factors are outlined below.

Anthropogenic Sound

Marine mammals respond to various types of anthropogenic sounds introduced in the ocean environment. Responses are highly variable and depend on a suite of internal and external factors which in turn results in varying degrees of significance (NRC, 2003; Southall *et al.,* 2007). Internal factors include: (1) Individual hearing sensitivity, activity pattern, and motivational and behavioral state (*e.g.,* feeding, traveling) at the time it receives the stimulus; (2) past exposure of the animal to the noise, which may lead to habituation or sensitization; (3) individual noise tolerance; and (4) demographic factors such as age, sex, and presence of dependent offspring. External factors include: (1) Non-acoustic characteristics of the sound source (*e.g.,* if it is moving or stationary); (2) environmental variables (*e.g.,* substrate) which influence sound transmission; and (3) habitat characteristics and location (*e.g.,* open ocean vs. confined area). To determine whether an animal perceives the sound, the received level, frequency, and duration of the sound are compared to ambient noise levels and the species' hearing sensitivity range. That is, if the frequency of an introduced sound is outside of the species' frequency hearing range, it can not be heard. Similarly, if the frequency is on the upper or lower end of the species hearing range, the sound must be louder in order to be heard.

Marine mammal responses to anthropogenic noise are typically subtle and can include visible and acoustic reactions such as avoidance, altered dive patterns and cessation of pre-exposure activities and vocalization reactions such as increasing or decreasing call rates or shifting call frequency. Responses can also be unobservable, such as stress hormone production and auditory trauma or fatigue. It is not always known how these behavioral and physiological responses relate to significant effects (*e.g.,* long-term effects or individual/population consequences); however, individuals and populations can be monitored to provide some insight into the consequences of exposing marine mammals to noise. For example, Haviland-Howell *et al* (2007) compared sighting rates of bottlenose dolphins within the Wilmington, NC stretch of the Atlantic Intracoastal Waterway (ICW) on weekends, when recreational vessel traffic was high, to weekdays, when vessel traffic was relatively minimal. The authors found that dolphins were less often sighted in the ICW during times of increased boat traffic (*i.e.,* on weekends) and theorized that because vessel noise falls within the frequencies of dolphin communication whistles and primary energy of most fish vocalizations, the continuous vessel traffic along that stretch of the ICW could result in social and foraging impacts. However, the extent to which these impacts affect individual health and population structure is unknown.

A full assessment of marine mammal responses and disturbances when exposed to anthropogenic sound can be found in NMFS' proposed rulemaking for the Navy Cherry Point Range Complex (74 FR 11057, March 16, 2009). In summary, sound exposure may result in physiological impacts, stress responses, and behavioral responses which could affect proximate or ultimate life functions. Proximate life history functions are the functions that the animal is engaged in at the time of acoustic exposure. The ultimate life functions are those that enable an animal to contribute to the population (or stock, or species, *etc.*).

I. Physiology-Hearing Threshold Shift

In mammals, high-intensity sound may rupture the eardrum, damage the small bones in the middle ear, or over stimulate the electromechanical hair cells that convert the fluid motions caused by sound into neural impulses that are sent to the brain. Lower level exposures may cause a loss of hearing sensitivity, termed a threshold shift (TS) (Miller, 1974). Incidence of TS may be either permanent, referred to as permanent threshold shift (PTS), or temporary, referred to as temporary threshold shift (TTS). The amplitude, duration, frequency, and temporal pattern, and energy distribution of sound exposure all affect the amount of associated TS and the frequency range in which it occurs. As amplitude and duration of sound exposure increase, generally, so does the amount of TS and recovery time. Human non-impulsive noise exposure guidelines are based on exposures of equal energy (the same SEL) producing equal amounts of hearing impairment regardless of how the sound energy is distributed in time (NIOSH 1998). Until recently, previous marine mammal TTS studies have also generally supported this equal energy relationship (Southall *et al.,* 2007). Three newer studies, two by Mooney *et al.* (2009a, 2009b) on a single bottlenose dolphin either exposed to playbacks of Navy MFAS or octave-band noise (4–8 kHz) and one by Kastak *et al.* (2007) on a single California sea lion exposed to airborne octave-band noise (centered at 2.5 kHz), concluded that for all noise exposure situations the equal energy relationship may not be the best indicator to predict TTS onset levels. Generally, with sound exposures of equal energy, those that were quieter (lower sound pressure level [SPL]) with longer duration were found to induce TTS onset more than those of louder (higher SPL) and shorter duration (more similar to noise from AS Cherry Point exercises). For intermittent sounds, less TS will occur than from a continuous exposure with the same energy (some recovery will occur between exposures) (Kryter *et al.,* 1966; Ward, 1997). Additionally, though TTS is temporary, very prolonged exposure to sound strong enough to elicit TTS, or shorter-term exposure to sound levels well above the TTS threshold, can cause PTS, at least in terrestrial mammals (Kryter, 1985). However, these studies highlight the inherent complexity of predicting TTS onset in marine mammals, as well as the importance of considering exposure duration when assessing potential impacts.

PTS consists of non-recoverable physical damage to the sound receptors in the ear, which can include total or partial deafness, or an impaired ability to hear sounds in specific frequency ranges; PTS is considered Level A harassment. TTS is recoverable and is considered to result from temporary, non-injurious impacts to hearing-related tissues; TTS is considered Level B harassment.

Permanent Threshold Shift

Auditory trauma represents direct mechanical injury to hearing related structures, including tympanic membrane rupture, disarticulation of the middle ear ossicles, and trauma to the inner ear structures such as the organ of Corti and the associated hair cells. Auditory trauma is irreversible and considered to be an injury that could result in PTS. PTS results from exposure to intense sounds that cause a permanent loss of inner or outer cochlear hair cells or exceed the elastic limits of certain tissues and membranes in the middle and inner ears and result in changes in the chemical composition of the inner ear fluids. In some cases, there can be total or partial deafness across all frequencies, whereas in other cases, the animal has an impaired ability to hear sounds in specific frequency ranges. There is no empirical data for onset of PTS in any marine mammal, and therefore, PTS- onset must be estimated from TTS-onset measurements and from the rate of TTS growth with increasing exposure levels above the level eliciting TTS-onset. PTS is presumed to be likely if the hearing threshold is reduced by ≥ 40 dB (*i.e.,* 40 dB of TTS). Relationships between TTS and PTS thresholds have not been studied in marine mammals, but are assumed to be similar to those in humans and other terrestrial mammals.

Temporary Threshold Shift

TTS is the mildest form of hearing impairment that can occur during exposure to a loud sound (Kryter, 1985). Southall *et al.* (2007) indicate that although PTS is a tissue injury, TTS is not because the reduced hearing sensitivity following exposure to intense sound results primarily from fatigue, not loss, of cochlear hair cells and supporting structures and is reversible. Accordingly, NMFS classifies TTS as Level B Harassment, not Level A Harassment (injury); however, NMFS does not consider the onset of TTS to be the lowest level at which Level B Harassment may occur (see *III. Behavior* section below).

Southall *et al.* (2007) considers a 6 dB TTS (*i.e.,* baseline hearing thresholds are elevated by 6 dB) sufficient to be recognized as an unequivocal deviation and thus a sufficient definition of TTS onset. TTS in bottlenose dolphin hearing have been experimentally induced. For example, Finneran *et al.* (2002) exposed a trained captive bottlenose dolphin to a seismic watergun simulator with a single acoustic pulse. No TTS was observed in the dolphin at the highest exposure condition (peak: 207 kPa [30psi]; peak-to-peak: 228 dB re: 1 microPa; SEL: 188 dB re 1 microPa^2-s). Schludt *et al.* (2000) demonstrated temporary shifts in masked hearing thresholds in five bottlenose dolphins occurring generally between 192 and 201 dB rms (192 and 201 dB SEL) after exposure to intense, non-pulse, 1–s tones at, 3kHz, 10kHz, and 20 kHz. TTS onset occurred at mean sound exposure level of 195 dB rms (195 dB SEL). At 0.4 kHz, no subjects exhibited threshold shifts after SPL exposures of 193dB re: 1 microPa (192 dB re: 1 microPa^2-s). In the same study, at 75 kHz, one dolphin exhibited a TTS after exposure at 182 dB SPL re: 1 microPa but not at higher exposure levels. Another dolphin experienced no threshold shift after exposure to maximum SPL levels of 193 dB re: 1 microPa at the same frequency. Frequencies of explosives used at MCAS Cherry Point range from 1–25 kHz; the range where dolphin TTS onset occurred at 195 dB rms in the Schludt *et al.* (2000) study.

Preliminary research indicates that TTS and recovery after noise exposure are frequency dependent and that an inverse relationship exists between exposure time and sound pressure level associated with exposure (Mooney *et al.,* 2005; Mooney, 2006). For example, Nachtigall *et al.* (2003) measured TTS in a bottlenose dolphin and found an average 11 dB shift following a 30 minute net exposure to OBN at a 7.5 kHz center frequency (max SPL of 179 dB re: 1 microPa; SEL: 212- 214 dB re:1 microPa^2-s). No TTS was observed after exposure to the same duration and frequency noise with maximum SPLs of 165 and 171 dB re:1 microPa. After 50 minutes of exposure to the same 7.5 kHz frequency OBN, Natchigall *et al.* (2004) measured a 4 -8 dB shift (max SPL: 160dB re 1microPa; SEL: 193–195 dB re:1 microPa^2-s). Finneran *et al.* (2005) concluded that a sound exposure level of 195 dB re 1 μPa^2-s is a reasonable threshold for the onset of TTS in bottlenose dolphins exposed to mid-frequency tones.

II. Stress Response

An acoustic source is considered a potential stressor if, by its action on the animal, via auditory or non-auditory means, it may produce a stress response in the animal. Here, the stress response will refer to an increase in energetic expenditure that results from exposure to the stressor and which is predominantly characterized by either the stimulation of the sympathetic nervous system (SNS) or the hypothalamic-pituitary-adrenal (HPA) axis (Reeder and Kramer, 2005). The SNS response to a stressor is immediate and acute and is characterized by the release of the catecholamine neurohormones norepinephrine and epinephrine (*i.e.,* adrenaline). These hormones produce elevations in the heart and respiration rate, increase awareness, and increase the availability of glucose and lipids for energy. The HPA response is ultimately defined by increases in the secretion of the glucocorticoid steroid hormones, predominantly cortisol in mammals. The presence and magnitude of a stress response in an animal depends on a number of factors. These include the animal's life history stage (*e.g.,* neonate, juvenile, adult), the environmental conditions, reproductive or developmental state, and experience with the stressor. Not only will these factors be subject to individual variation, but they will also vary within an individual over time. The stress response may or may not result in a behavioral change, depending on the characteristics of the exposed animal. However, provided a stress response occurs, we assume that some contribution is made to the animal's allostatic load. Any immediate effect of exposure that produces an injury is assumed to also produce a stress response and contribute to the allostatic load. Allostasis is the ability of an animal to maintain stability through change by adjusting its physiology in response to both predictable and unpredictable events (McEwen and Wingfield, 2003). If the acoustic source does not produce tissue effects, is not perceived by the animal, or does not produce a stress response by any other means, we assume that the exposure does not contribute to the allostatic load. Additionally, without a stress response or auditory masking, it is assumed that there can be no behavioral change.

III. Behavior

Changes in marine mammal behavior in response to anthropogenic noise may include altered travel directions, increased swimming speeds, changes in dive, surfacing, respiration and feeding patterns, and changes in vocalizations. As described above, lower level physiological stress responses could also co-occur with altered behavior; however, stress responses are more difficult to detect and fewer data exist relative to specific received levels of sound.

Acoustic Masking

Anthropogenic noise can interfere with, or mask, detection of acoustic signals such as communication calls, echolocation, and environmental sounds important to marine mammals. Southall *et al.* (2007) defines auditory masking as the partial or complete reduction in the audibility of signals due to the presence of interfering noise with the degree of masking depending on the spectral, temporal, and spatial relationships between signals and masking noise, as well as the respective received levels. Masking of sender communication space can be considered as the amount of change in a sender's communication space caused by the presence of other sounds, relative to a pre-industrial ambient noise condition (Clark *et al., in press*).

Unlike auditory fatigue, which always results in a stress response because the sensory tissues are being stimulated beyond their normal physiological range, masking may or may not result in a stress response, depending on the degree and duration of the masking effect. Masking may also result in a unique circumstance where an animal's ability to detect other sounds is compromised without the animal's knowledge. This could conceivably result in sensory impairment and subsequent behavior change; in this case, the change in behavior is the lack of a response that would normally be made if sensory impairment did not occur. For this reason, masking also may lead directly to behavior change without first causing a stress response.

Projecting noise into the marine environment which causes acoustic masking is considered Level B harassment as it can disrupt natural behavioral patterns by interrupting or limiting the marine mammal's receipt or transmittal of important information or environmental cues. To compensate for masking, marine mammals, including bottlenose dolphins, are known to increase their levels of vocalization as a function of background noise by increasing call repetition and amplitude, shifting calls higher frequencies, and/or changing the structure of call content (Lesage *et al.,* 1999; Scheifele *et al.,* 2005; McIwem, 2006).

While it may occur temporarily, NMFS does not expect auditory masking to result in detrimental impacts to an individual's or population's survival, fitness, or reproductive success. Dolphins are not confined to the BT ranges; allowing for movement out of area to avoid masking impacts. The USMC would also conduct visual sweeps of the area before any training exercise and implement training delay mitigation measures if a dolphin is sighted within designated zones *(see Proposed Mitigation Measures* section below). As discussed previously, the USMC has been working with DUML to collect baseline information on dolphins in Pamlico Sound, specifically dolphin abundance and habitat use around the BTs. The USMC has also recently accepted a DUML proposal to investigate methods of dolphin acoustic detection around the BTs. NMFS would encourage the USMC to expand acoustic investigations to include the impacts of training exercises on vocalization properties (*e.g.,* call content, duration, frequency) and masking (*e.g.,* communication and foraging impairment) of the affected population of dolphins in Pamlico Sound.

Assessment of Marine Mammal Impacts From Explosive Ordnances

MCAS Cherry Point plans to use five types of explosive sources during its training exercises: 2.75″ Rocket High Explosives, 5″ Rocket High Explosives, 30 mm High Explosives, 40 mm High Explosives, and G911 grenades. The underwater explosions from these weapons would send a shock wave and blast noise through the water, release gaseous by-products, create an oscillating bubble, and cause a plume of water to shoot up from the water surface. The shock wave and blast noise are of most concern to marine animals. In general, potential impacts from explosive detonations can range from brief effects (such as short term behavioral disturbance), tactile perception, physical discomfort, slight injury of the internal organs and the auditory system, to death of the animal (Yelverton *et al.,* 1973; O'Keeffe and Young, 1984; DoN, 2001).

Explosives produce significant acoustic energy across several frequency decades of bandwidth (*i.e.,* broadband). Propagation loss is sufficiently sensitive to frequency as to require model estimates at several frequencies over such a wide band. The effects of an underwater explosion on a marine mammal depend on many factors, including the size, type, and depth of both the animal and the explosive charge; the depth of the water column; and the standoff distance between the charge and the animal, as well as the sound propagation properties of the environment. The net explosive weight (or NEW) of an explosive is the weight of TNT required to produce an equivalent explosive power. The detonation depth of an explosive is particularly important due to a propagation effect known as surface-image interference. For sources located near the sea surface, a distinct interference pattern arises from the coherent sum of the two paths that differ only by a single reflection from the pressure-release surface. As the source depth and/or the source frequency decreases, these two paths increasingly, destructively interfere with each other, reaching total cancellation at the surface (barring surface-reflection scattering loss). USMC conservatively estimates that all explosives would detonate at a 1.2 m (3.9 ft) water depth. This is the worst case scenario as the purpose of training is to hit the target, resulting in an in-air explosion.

The firing sequence for some of the munitions consists of a number of rapid bursts, often lasting a second or less. The maximum firing time is 10–15 second bursts. Due to the tight spacing in time, each burst can be treated as a single detonation. For the energy metrics, the impact area of a burst is computed using a source energy spectrum that is the source spectrum for a single detonation scaled by the number of rounds in a burst. For the pressure metrics, the impact area for a burst is the same as the impact area of a single round. For all metrics, the cumulative impact area of an event consisting of a certain number of bursts is merely the product of the impact area of a single burst and the number of bursts, as would be the case if the bursts are sufficiently spaced in time or location as to insure that each burst is affecting a different set of marine wildlife.

Physical damage of tissues resulting from a shock wave (from an explosive detonation) is classified as an injury. Blast effects are greatest at the gas-liquid interface (Landsberg, 2000) and gas containing organs, particularly the lungs and gastrointestinal tract, are especially susceptible to damage (Goertner, 1982; Hill 1978; Yelverton *et al.,* 1973). Nasal sacs, larynx, pharynx, trachea, and lungs may be damaged by compression/expansion caused by the oscillations of the blast gas bubble (Reidenberg and Laitman, 2003). Severe damage (from the shock wave) to the ears can include tympanic membrane rupture, fracture of the ossicles, damage to the cochlea, hemorrhage, and cerebrospinal fluid leakage into the middle ear.

Non-lethal injury includes slight injury to internal organs and the auditory system; however, delayed lethality can be a result of individual or cumulative sublethal injuries (DoN, 2001). Immediate lethal injury would be a result of massive combined trauma to internal organs as a direct result of proximity to the point of detonation (DoN, 2001). Exposure to distance explosions could result only in behavioral changes. Masked underwater hearing thresholds in two bottlenose dolphins and one beluga whale have been measured before and after exposure to impulsive underwater sounds with waveforms resembling distant signatures of underwater explosions (Finneran *et al.,* 2000). The authors found no temporary shifts in masked-hearing thresholds (MTTSs), defined as a 6–dB or larger increase in threshold over pre-exposure levels, had been observed at the highest impulse level generated (500 kg at 1.7 km, peak pressure 70 kPa); however, disruptions of the animals' trained behaviors began to occur at exposures corresponding to 5 kg at 9.3 km and 5 kg at 1.5 km for the dolphins and 500 kg at 1.9 km for the beluga whale.

Generally, the higher the level of impulse and pressure level exposure, the more severe the impact to an individual. While, in general, dolphins could endure injury or mortality if within very close proximity to in-water explosion, monitoring and mitigation measures employed by the USMC before and during training exercises, as would be required under any ITA issued, are designed to avoid any firing if a marine mammal is sighted within designated BT zones (see Proposed Mitigation and Monitoring section below). No marine mammal injury or death has been attributed to the specified activities described in the application. As such, and due to implementation of the proposed mitigation and monitoring measures, bottlenose dolphin injury or mortality is not anticipated nor would any be authorized.

Inert Ordnances

The potential risk to marine mammals from non-explosive ordnance entails two possible sources of impacts: Elevated sound levels or the ordnance physically hitting an animal. The latter is discussed below in the *Munition Presence* section below. The USMC provided information that the noise fields generated in water by the firing of non-explosive ordnance indicate that the energy radiated is about 1 to 2 percent of the total kinetic energy of the impact. This energy level (and likely peak pressure levels) is well below the TTS-energy threshold, even at 1–m from the impact and is not expected to be audible to marine mammals. As such, the noise generated by the in-water impact of non-explosive ordnance will not result in take of marine mammals.

Training Debris

In addition to behavioral and physiological impacts from live fire and ammunition testing, NMFS has preliminarily analyzed impacts from presence of munition debris in the water, as described in the USMC's application and 2009 EA. These impacts include falling debris, ingestion of expended ordnance, and entanglement in parachute debris.

Ingestion of marine debris by marine mammals can cause digestive tract blockages or damage the digestive system (Gorzelany, 1998; Stamper *et al.,* 2006). Debris could be either the expended ordnance or non-munition related products such as chaff and self protection flares. Expended ordnance would be small and sink to the bottom. Chaff is composed of either aluminum foil or aluminum-coated glass fibers designed to act as a visual smoke screen; hiding the aircraft from enemy radar. Chaff also serves as a decoy for radar detection, allowing aircraft to maneuver or egress from the area. The foil type currently used is no longer manufactured, although it remains in the inventory and is used primarily by B–52 bombers. Both types of chaff are cut into dipoles ranging in length from 0.3 to over 2.0 inches. The aluminum foil dipoles are 0.45 mils (0.00045 inches) thick and 6 to 8 mils wide. The glass fiber dipoles are generally 1 mil (25.4 microns) in diameter, including the aluminum coating. Chaff is packed into about 4-ounce bundles. The major components of chaff are silica, aluminum, and stearic acid; all naturally prevalent in the environment.

Based on the dispersion characteristics of chaff, concentrations around the BTs would be low. For example, Hullar *et al.* (1999) calculated that a 4.97-mile by 7.46-mile area (37.1 km^2) would be affected by deployment of a single cartridge containing 150 grams of chaff; however, concentration would only be about 5.4 grams per square nautical mile. This corresponds to fewer than 179,000 fibers per square nautical mile or fewer than 0.005 fibers per square foot.

Self-protection flares are deployed to mislead or confuse heat-sensitive or heat-seeking anti-aircraft systems. The flares are magnesium pellets that, when ignited, burn for a short period of time (less than 10 seconds) at 2,000 degrees Fahrenheit. Air-deployed LUU–2 high-intensity illumination flares are used to illuminate targets, enhancing a pilot's ability to see targets while using Night Vision Goggles. The LUU–2B Flare has a light output rating of $1.8 \times 10(6)$ candlepower and at 1,000 feet altitude illuminates a circle on the ground of 500 meters. The LUU–2 is housed in a pod or canister and is deployed by ejection. The mechanism has a timer on it that deploys the parachute and ignites the flare candle. The flare candle burns magnesium at high temperature, emitting an intense bright white light. The LUU–2 has a burn time of approximately 5 minutes while suspended from a parachute. The pyrotechnic candle consumes the flare housing, reducing flare weight, which in turn slows the rate of fall during the last 2 minutes of burn time. At candle burnout an explosive bolt is fired, releasing one parachute support cable, which causes the parachute to collapse.

Ingestion of debris by dolphins is not likely, as dolphins typically eat fish and other moving prey items. NMFS solicited information on evidence of debris ingestion from two marine mammal veterinarians who have performed many necropsies on the protected species of North Carolina's waters. In their experience, no necropsies of bottlenose dolphins have revealed evidence of munition, parachute, or chaff ingestion (pers. comm., Drs. C. Harms and D. Rostein, November 14, 2009). However, it was noted evidence of chaff ingestion would be difficult to detect. In the chance that dolphins do ingest chaff, the filaments are so fine they would likely pass through the digestive system without complication. However, if the chaff is durable enough, it might act as a linear foreign body. In such case, the intestines bunch up on the line restricting movement of the line resulting in an obstruction. The peristalsis on an immovable thin line can cause intestinal lacerations and perforations (pers. comm., C. Harms, November 14, 2009. This is a well known complication in cats when they ingest thread and which occurs occasionally with sea turtles ingesting fishing line. The longevity of chaff filaments, based upon dispersion rates, is unclear. Chaff exposed to synthetic seawater and aqueous environments in the pH range of 4–10 exhibited varying levels of degradation suggesting a short lifespan for the outer aluminum coating (Farrell and Siciliano, 1998). The underlying filament is a flexible silica core and composed of primarily silica dioxide. While no studies have been conducted to evaluate the effects of chaff ingestion on marine mammals, the effects are expected to be negligible based upon chaff concentration in the environment, size of fibers, and available toxicity data on fiberglass and aluminum. Given that the size of chaff fibers are no more than 2 inches long, tidal flushing reduces concentration in the environment, and chaff degradation rate, the chance of chaff ingestions is unlikely; however, if swallowed, impacts would be negligible.

Given that there is no evidence that dolphins ingest military debris; dolphins in the Sound forage on moving prey suspended in the water column while expended munition would sink; the property and dispersion characteristics of chaff make potential for ingestion discountable; and that Pamlico Sound is a tidal body of water with continuing flushing, NMFS has preliminarily determined that the presence of training debris would not have an effect on dolphins in Pamlico Sound.

Although sometimes large, expended parachutes (*e.g.,* those from the flares) are flimsy and structurally simple and NMFS has determined that the probability of entanglement with a dolphin is low. There are no known reports of live or stranded dolphins entangled in parachute gear; fishing gear is usually the culprit of reported entanglements. The NMFS' Marine Mammal Stranding Network (Network) has established protocol for reporting marine mammals in peril. Should any injured, stranded or entangled marine mammal be observed by USMC personnel during training exercises, the sighting would be reported to the Network within 24 hours of the observation.

Vessel and Aircraft Presence

The marine mammals most vulnerable to vessel strikes are slow-moving and/or spend extended periods of time at the surface in order to restore oxygen levels within their tissues after deep dives (*e.g.,* right whales, fin whales, sperm whales). Smaller marine mammals such as bottlenose dolphins (the only marine mammal that would be encountered at the BTs) are agile and move more quickly through the water, making them less susceptible to ship strikes. NMFS is not aware of any vessel strikes of bottlenose dolphins in Pamlico Sound. Therefore, NMFS does not anticipate that USMC vessels engaged in the specified activity would strike any marine mammals and no take from ship strike would be authorized in the proposed IHA.

Behaviorally, marine mammals may or may not respond to the operation of vessels and associated noise. Responses to vessels vary widely among marine mammals in general, but also among different species of small cetaceans. Responses may include attraction to the vessel (Richardson *et al.,* 1995); altering travel patterns to avoid vessels (Constantine, 2001; Nowacek *et al.,* 2001; Lusseau, 2003, 2006); relocating to other areas (Allen and Read, 2000); cessation of feeding, resting, and social interaction (Baker *et al.,* 1983; Bauer and Herman, 1986; Hall, 1982; Krieger and Wing, 1984; Lusseau, 2003; Constantine *et al.,* 2004); abandoning feeding, resting, and nursing areas (Jurasz and Jurasz 1979; Dean *et al.,* 1985; Glockner-Ferrari and Ferrari 1985, 1990; Lusseau, 2005; Norris *et al.,* 1985; Salden, 1988; Forest, 2001; Morton and Symonds, 2002; Courbis, 2004; Bejder, 2006); stress (Romano *et al.,* 2004); and changes in acoustic behavior (Van Parijs and Corkeron, 2001). However, in some studies marine mammals display no reaction to vessels (Watkins 1986; Nowacek *et al.,* 2003) and many odontocetes show considerable tolerance to vessel traffic (Richardson *et al.,* 1995). Dolphins may actually reduce the energetic cost of traveling by riding the bow or stern waves of vessels (Williams *et al.,* 1992; Richardson *et al.,* 1995).

Dolphins within Pamlico Sound are continually exposed to recreational, commercial, and military vessels. Richardson *et al.* (1995) addresses in detail three responses that marine mammals may experience when exposed to anthropogenic activities: Tolerance; habituation; and sensitization. More recent publications provide variations on these themes rather than new data (NRC 2003). Marine mammals are often seen in regions with much human activity; thus, certain individuals or populations exhibit some tolerance of anthropogenic noise and other stimuli. Animals will tolerate a stimulus they might otherwise avoid if the benefits in terms of feeding, mating, migrating to traditional habitats, or other factors outweigh the negative aspects of the stimulus (NRC, 2003). In many cases, tolerance develops as a result of habituation. The NRC (2003) defines habituation as a gradual waning of behavioral responsiveness over time as animals learn that a repeated or ongoing stimulus lacks significant consequences for the animals. Contrarily, sensitization occurs when an animal links a stimulus with some degree of negative consequence and as a result increases responsiveness to that human activity over time (Richardson *et al.,* 1995). For example, seals and whales are known to avoid previously encountered vessels involved in subsistence hunts (Walker, 1949; Ash 1962; Terhune, 1985) and bottlenose dolphins that had previously been captured and released from a 7.3 m boat involved in health studies were documented to flee when that boat approached closer than 400 m, whereas dolphins that had not been involved in the capture did not display signs of avoidance of the vessel (Irvine *et al.,* 1981). Because dolphins in Pamlico Sound are continually exposed to vessel traffic that does not present immediate danger to them, it is likely animals are both tolerant and habituated to vessels.

The specified activities also involve aircraft, which marine mammals are known to react (Richardson *et al.,* 1995). Aircraft produce noise at frequencies that are well within the frequency range of cetacean hearing and also produce visual signals such as the aircraft itself and its shadow (Richardson *et al.,* 1995, Richardson & Würsig, 1997). A major difference between aircraft noise and noise caused by other anthropogenic sources is that the sound is generated in the air, transmitted through the water surface and then propagates underwater to the receiver, diminishing the received levels to significantly below what is heard above the water's surface. Sound transmission from air to water is greatest in a sound cone 26 degrees directly under the aircraft.

Reactions of odontocetes to aircraft have been reported less often than those of pinnipeds. Responses to aircraft include diving, slapping the water with pectoral fins or tail fluke, or swimming away from the track of the aircraft (Richardson *et al.,* 1995). The nature and degree of the response, or the lack thereof, are dependent upon nature of the flight (*e.g.,* type of aircraft, altitude, straight vs. circular flight pattern). Würsig *et al.* (1998) assessed the responses of cetaceans to aerial surveys in the northcentral and western Gulf of Mexico using a DeHavilland Twin Otter fixed-wing airplane. The plane flew at an altitude of 229 m at 204 km/hr. A minimum of 305 m straight line distance from the cetaceans was maintained. Water depth was 100–1000m. Bottlenose dolphins most commonly responded by diving (48percent), while 14percent responded by moving away. Other species (*e.g.,* beluga whale, sperm whale) show considerable variation in reactions to aircraft but diving or swimming away from the aircraft are the most common reactions to low flights (less than 500 m).

Anticipated Effects on Habitat

Detonations of live ordnance would result in temporary modification to water properties. As described above, an underwater explosion from these weapon would send a shock wave and blast noise through the water, release gaseous by-products, create an oscillating bubble, and cause a plume of water to shoot up from the water surface. However, these would be temporary and not expected to last more than a few seconds. Because dolphins are not expected to be in the area during live firing, due to monitoring and mitigation measure implementation, they would not be subject to any short term habitat alterations.

Similarly, no long term impacts with regard to hazardous constituents are expected to occur. MCAS Cherry Point has an active Range Environmental Vulnerability Assessment (REVA) program in place to monitor impacts to habitat from its activities. One goal of REVA is to determine the horizontal and vertical concentration profiles of heavy metals, explosives constituents, perchlorate nutrients, and dissolved salts in the sediment and seawater surrounding BT–9 and BT–11. The preliminary results of the sampling indicate that explosive constituents (*e.g.,* trinitrotoluene (TNT), cyclotrimethylenetrinitramine (RDX), and hexahydro-trinitro-triazine (HMX), as described in Hazardous Constituents [Subchapter 3.2.7.2] of the MCAS Cherry Point Range Operations EA), were not detected in any sediment or water sample surrounding the BTs. Metals were not present above toxicity screening values. Perchlorate was detected in a few sediment samples above the detection limit (0.21 ppm), but below the reporting limit (0.6 ppm). The ongoing REVA would continue to evaluate potential munitions constituent migration from operational range areas to off-range areas and MCAS Cherry Point.

Proposed Mitigation

In order to issue an incidental take authorization (ITA) under Section 101(a)(5)(D) of the MMPA, NMFS must set forth the "permissible methods of taking pursuant to such activity, and other means of effecting the least practicable adverse impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance." The NDAA of 2004 amended the MMPA as it relates to military-readiness activities and the ITA process such that "least practicable adverse impact" shall include consideration of personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity. The training activities described in the USMC's application are considered military readiness activities.

NMFS has carefully evaluated the applicant's proposed mitigation measures and considered a range of other measures in the context of ensuring that NMFS prescribes the means of effecting the least practicable adverse impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another: (1) The manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals; (2) the proven or likely efficacy of the specific measure to minimize adverse impacts as planned; (3) the practicability of the measure for applicant implementation, including consideration of personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity. NMFS has preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable adverse impacts on marine mammals species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance while also considering personnel safety, practicality of implementation, and impact on the effectiveness of the military readiness activity.

The USMC, in collaboration with NMFS, has worked to identify potential practicable and effective mitigation measures, which include a careful balancing of the likely benefit of any particular measure to the marine mammals with the likely effect of that measure on personnel safety, practicality of implementation, and impact on the "military-readiness activity". These proposed mitigation measures are listed below.

(1) *Range Sweeps:* The VMR–1 squadron, stationed at MCAS Cherry Point, includes three specially equipped HH–46D helicopters. The primary mission of these aircraft, known as PEDRO, is to provide search and rescue for downed 2d Marine Air Wing aircrews. On-board are a pilot, co-pilot, crew chief, search and rescue swimmer, and a medical corpsman. Each crew member has received extensive training in search and rescue techniques, and is therefore particularly capable at spotting objects floating in the water.

PEDRO crew would conduct a range sweep the morning of each exercise day prior to the commencement of range operations. The primary goal of the pre-exercise sweep is to ensure that the target area is clear of fisherman, other personnel, and protected species. The sweep is flown at 100–300 meters above the water surface, at airspeeds between 60–100 knots. The path of the sweep runs down the western side of BT–11, circles around BT–9 and then continues down the eastern side of BT–9 before leaving. The sweep typically takes 20–30 minutes to complete. The Pedro crew is able to communicate directly with range personnel and can provide immediate notification to range operators. The Pedro aircraft would remain in the area of a sighting until clear if possible or as mission requirements dictate.

If marine mammals are sighted during a range sweep, sighting data will be collected and entered into the U.S. Marine Corps sighting database, web-interface, or report generator and this information would be relayed to the training Commander. Sighting data includes the following (collected to the best of the observer's ability): (1) Species identification; (2) group size; (3) the behavior of marine mammals (*e.g.,* milling, travel, social, foraging); (4) location and relative distance from the BT; (5) date, time and visual conditions (*e.g.,* Beaufort sea state, weather) associated with each observation; (6) direction of travel relative to the BT; and (7) duration of the observation.

(2) *Cold Passes:* All aircraft participating in an air-to-surface exercise would be required to perform a "cold pass" immediately prior to ordnance delivery at the BTs both day and night. That is, prior to granting a "First Pass Hot" (use of ordnance), pilots would be directed to perform a low, cold (no ordnance delivered) first pass which serves as a visual sweep of the targets prior to ordnance delivery to determine if unauthorized civilian vessels or personnel, or protected species, are present. The cold pass is conducted with the aircraft (helicopter or fixed-winged) flying straight and level at altitudes of 200–3,000 feet over the target area. The viewing angle is approximately 15 degrees. A blind spot exists to the immediate rear of the aircraft. Based upon prevailing visibility, a pilot can see more than one mile forward upon approach. The aircrew and range personnel make every attempt to ensure clearance of the area via visual inspection and remotely operated camera operations (*see* Proposed Monitoring and Reporting section below). The Range Controller may deny or approve the First Pass Hot clearance as conditions warrant.

(3) *Delay of Exercises:* An active range would be considered "fouled" and not available for use if a marine mammal is present within 1,000 yards (914 m) of the target area at BT–9 or anywhere within Rattan Bay (BT–11). Therefore, if a marine mammal is sighted within 1,000 yards (914 m) of the target at BT–9 or anywhere within Rattan Bay at BT–11 during the cold pass or from range camera detection, training would be delayed until the marine mammal moves beyond and on a path away from 1,000 yards (914 m) from the BT–9 target or out of Rattan Bay at BT–11. This mitigation applies to both air-to-surface and surface-to-surface exercises.

(4) *Range Camera Use:* To increase the safety of persons or property near the targets, Range Operation and Control personnel monitor the target area through tower mounted safety and surveillance cameras. The remotely operated range cameras are high resolution and, according to range personnel, allow a clear visual of a duck floating near the target. The cameras allow viewers to see animals at the surface and breaking the surface, but not underwater.

A new, enhanced camera system has been purchased and will be installed on BT–11 towers 3 and 7, and on both towers at BT–9. The new camera system has night vision capabilities with resolution levels near those during daytime. Lenses on the camera system have focal lengths of 40 mm to 2,200 mm (56x), with view angles of 18°10′ and 13°41′, respectively. The field of view when zoomed in on the Rattan Bay targets will be 23′ wide by 17′ high, and on the mouth of Rattan Bay itself 87′ wide by 66′ high.

Again, in the event that a marine mammal is sighted within 1,000 yards

(914 m) of the BT–9 target, or anywhere within Rattan Bay, the target is declared fouled. Operations may commence in the fouled area after the animal(s) have moved 1,000 yards (914 m) from the BT–9 target and/or out of Rattan Bay.

(4) *Vessel Operation:* All vessels used during training operations would abide by the NMFS' Southeast Regional Viewing Guidelines designed to prevent harassment to marine mammals *(http://www.nmfs.noaa.gov/pr/education/southeast/).*

(5) *Stranding Network Coordination:* The USMC shall coordinate with the local NMFS Stranding Coordinator for any unusual marine mammal behavior and any stranding, beached live/dead, or floating marine mammals that may occur at any time during training activities or within 24 hours after completion of training.

Proposed Monitoring and Reporting

In order to issue an ITA for an activity, Section 101(a)(5)(A) of the MMPA states that NMFS must set forth "requirements pertaining to the monitoring and reporting of such taking". The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for incidental take authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present. Monitoring measures prescribed by NMFS should accomplish one or more of the following general goals: (a) An increase in our understanding of how many marine mammals are likely to be exposed to munition noise and explosions that we associate with specific adverse effects, such as behavioral harassment, TTS, or PTS; (b) an increase in our understanding of how individual marine mammals respond (behaviorally or physiologically) to gunnery and bombing exercises (at specific received levels) expected to result in take; (c) an increase in our understanding of how anticipated takes of individuals (in different ways and to varying degrees) may impact the population, species, or stock (specifically through effects on annual rates of recruitment or survival); (d) an increased knowledge of the affected species; (e) an increase in our understanding of the effectiveness of certain mitigation and monitoring measures; (f) a better understanding and record of the manner in which the authorized entity complies with the incidental take authorization; (g) an increase in the probability of detecting marine mammals, both within the safety zone (thus allowing for more effective implementation of the mitigation) and in general to better achieve the above goals.

Proposed Monitoring

The suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals expected to be present within the action area are as follows:

(1) *Marine Mammal Observer Training:* Pilots, operators of small boats, and other personnel monitoring for marine mammals would be required to take the Marine Species Awareness Training (Version 2.), maintained and promoted by the Department of the Navy. This training will make personnel knowledgeable of marine mammals, protected species, and visual cues related to the presence of marine mammals and protected species.

(2) *Weekly and Post-Exercise Monitoring:* Post-exercise monitoring shall be conducted concomitant to the next regularly scheduled pre-exercise sweep. Weekly monitoring events would include a maximum of five pre-exercise and four post-exercise sweeps. The maximum number of days that would elapse between pre- and post-exercise monitoring events would be approximately 3 days, and would normally occur on weekends. If marine mammals are observed during this monitoring, sighting data identical to those collected by PEDRO crew would be recorded.

(3) *Long-term Monitoring:* The USMC has awarded DUML duties to obtain abundance, group dynamics (*e.g.,* group size, age census), behavior, habitat use, and acoustic data on the bottlenose dolphins which inhabit Pamlico Sound, specifically those around BT–9 and BT–11. DUML began conducting boat-based surveys and passive acoustic monitoring of bottlenose dolphins in Pamlico Sound in 2000 (Read *et al.,* 2003) and specifically at BT–9 and BT–11 in 2003 (Mayer, 2003). To date, boat-based surveys indicate that bottlenose dolphins may be resident to Pamlico Sound and use BT restricted areas on a frequent basis. Passive acoustic monitoring (PAM) is providing more detailed insight into how dolphins use the two ranges, by monitoring for their vocalizations year-round, regardless of weather conditions or darkness. In addition to these surveys, DUML scientists are testing a real-time passive acoustic monitoring system at BT–9 that will allow automated detection of bottlenose dolphin whistles, providing yet another method of detecting dolphins prior to training operations. Although it is unlikely this PAM system would be active for purposes of implementing mitigation measures before an exercise prior to expiration of the proposed IHA, it would be operational for future MMPA incidental take authorizations.

(4) *Reporting:* The USMC would submit a report to NMFS within 90 days after expiration of the IHA or, if a subsequent incidental take authorization is requested, within 120 days prior to expiration of the IHA. The report would summarize the type and amount of training exercises conducted, all marine mammal observations made during monitoring, and if mitigation measures were implemented. The report would also address the effectiveness of the monitoring plan in detecting marine mammals.

Estimated Take by Incidental Harassment

The following provides the USMC's model for take of dolphins from explosives (without consideration of mitigation and the conservative assumption that all explosives would land in the water and not on the targets or land) and potential for direct hits and NMFS' analysis of potential harassment from small vessel and aircraft operations.

Acoustic Take Criteria

For the purposes of an MMPA incidental take authorization, three levels of take are identified: Level B harassment; Level A harassment; and mortality (or serious injury leading to mortality). The categories of marine mammal responses (physiological and behavioral) that fall into harassment categories were described previously in this notice. A method to estimate the number of individuals that will be taken, pursuant to the MMPA, based on the proposed action has been derived. To this end, NMFS uses acoustic criteria that estimate at what received level Level B harassment, Level A harassment, and mortality of marine mammals would occur. The acoustic criteria for underwater detonations are comprehensively explained in NMFS' recent proposed rule **Federal Register** notice to the U.S. Navy (74 FR 11057, March 16, 2009) and are summarized here:

Criteria and thresholds for estimating the exposures from a single explosive activity on marine mammals were established for the Seawolf Submarine Shock Test Final Environmental Impact Statement (FEIS) ("Seawolf") and subsequently used in the USS Winston S. Churchill (DDG 81) Ship Shock FEIS ("Churchill") (DoN, 1998 and 2001). NMFS adopted these criteria and thresholds in its final rule on the unintentional taking of marine animals occurring incidental to the shock testing which involved large explosives (65 FR 77546; December 12, 2000). Because no large explosives (≤ 1000 lbs NEW) would be used at Cherry Point during the specified activities, a revised acoustic criterion for small underwater explosions (*i.e.,* 23 pounds per square inch [psi] instead of previous acoustic criteria of 12 psi for peak pressure over all exposures) has been established to predict onset of TTS.

I.1. Thresholds and Criteria for Injurious Physiological Impacts

I.1.a. Single Explosion

For injury, NMFS uses dual criteria, eardrum rupture (*i.e.* tympanic-membrane injury) and onset of slight lung injury, to indicate the onset of injury. The threshold for tympanic-membrane (TM) rupture corresponds to a 50 percent rate of rupture (*i.e.,* 50 percent of animals exposed to the level are expected to suffer TM rupture). This value is stated in terms of an Energy Flux Density Level (EL) value of 1.17 inch pounds per square inch (in-lb/in^2), approximately 205 dB re 1 microPa^2-sec.

The threshold for onset of slight lung injury is calculated for a small animal (a dolphin calf weighing 26.9 lbs), and is given in terms of the "Goertner modified positive impulse," indexed to 13 psi-msec (DoN, 2001). This threshold is conservative since the positive impulse needed to cause injury is proportional to animal mass, and therefore, larger animals require a higher impulse to cause the onset of injury. This analysis assumed the marine species populations were 100 percent small animals. The criterion with the largest potential impact range (most conservative), either TM rupture (energy threshold) or onset of slight lung injury (peak pressure), will be used in the analysis to determine Level A exposures for single explosive events.

For mortality, NMFS uses the criterion corresponding to the onset of extensive lung injury. This is conservative in that it corresponds to a 1 percent chance of mortal injury, and yet any animal experiencing onset severe lung injury is counted as a lethal exposure. For small animals, the threshold is given in terms of the Goertner modified positive impulse, indexed to 30.5 psi-msec. Since the Goertner approach depends on propagation, source/animal depths, and animal mass in a complex way, the actual impulse value corresponding to the 30.5 psi-msec index is a complicated calculation. To be conservative, the analysis used the mass of a calf dolphin (at 26.9 lbs) for 100 percent of the populations.

I.1.b. Multiple Explosions

For multiple explosions, the Churchill approach had to be extended to cover multiple sound events at the same training site. For multiple exposures, accumulated energy over the entire training time is the natural extension for energy thresholds since energy accumulates with each subsequent shot (detonation); this is consistent with the treatment of multiple arrivals in Churchill. For positive impulse, it is consistent with the Churchill final rule to use the maximum value over all impulses received.

I.2. Thresholds and Criteria for Non-Injurious Physiological Effects

To determine the onset of TTS (non-injurious harassment)—a slight, recoverable loss of hearing sensitivity, there are dual criteria: an energy threshold and a peak pressure threshold. The criterion with the largest potential impact range (most conservative), either the energy or peak pressure threshold, will be used in the analysis to determine Level B TTS exposures. The thresholds for each criterion are described below.

I.2.a. Single Explosion—TTS-Energy Threshold

The TTS energy threshold for explosives is derived from the Space and Naval Warfare Systems Center (SSC) pure-tone tests for TTS (Schlundt *et al.,* 2000; Finneran and Schlundt, 2004). The pure-tone threshold (192 dB as the lowest value) is modified for explosives by (a) interpreting it as an energy metric, (b) reducing it by 10 dB to account for the time constant of the mammal ear, and (c) measuring the energy in 1/3-octave bands, the natural filter band of the ear. The resulting threshold is 182 dB re 1 microPa^2-sec in any 1/3-octave band.

I.2.b. Single Explosion—TTS-Peak Pressure Threshold

The second threshold applies to all species and is stated in terms of peak pressure at 23 psi (about 225 dB re 1 microPa). This criterion was adopted for Precision Strike Weapons (PSW) Testing and Training by Eglin Air Force Base in the Gulf of Mexico (NMFS, 2005). It is important to note that for small shots near the surface (such as in this analysis), the 23-psi peak pressure threshold generally will produce longer impact ranges than the 182-dB energy metric. Furthermore, it is not unusual for the TTS impact range for the 23-psi pressure metric to actually exceed the without-TTS (behavioral change without onset of TTS) impact range for the 177-dB energy metric.

I.3. Thresholds and Criteria for Behavioral Effects

I.3.a. Single Explosion

For a single explosion, to be consistent with Churchill, TTS is the criterion for Level B harassment. In other words, because behavioral disturbance for a single explosion is likely to be limited to a short-lived startle reaction, use of the TTS criterion is considered sufficient protection and therefore behavioral effects (Level B behavioral harassment without onset of TTS) are not expected for single explosions.

I.3.b. Multiple Explosions—Without TTS

For multiple explosions, the Churchill approach had to be extended to cover multiple sound events at the same training site. For multiple exposures, accumulated energy over the entire uninterrupted firing time is the natural extension for energy thresholds since energy accumulates with each subsequent shot (detonation); this is consistent with the treatment of multiple arrivals in Churchill. Because multiple explosions could occur within a discrete time period, a new acoustic criterion-behavioral disturbance without TTS is used to account for behavioral effects significant enough to be judged as harassment, but occurring at lower noise levels than those that may cause TTS.

The threshold is based on test results published in Schlundt *et al.* (2000), with derivation following the approach of the Churchill FEIS for the energy-based TTS threshold. The original Schlundt *et al.* (2000) data and the report of Finneran and Schlundt (2004) are the basis for thresholds for behavioral disturbance without TTS. During this study, instances of altered behavior sometimes began at lower exposures than those causing TTS; however, there were many instances when subjects exhibited no altered behavior at levels above the onset-TTS levels. Regardless of reactions at higher or lower levels, all instances of altered behavior were included in the statistical summary. The behavioral disturbance without TTS threshold for tones is derived from the SSC tests, and is found to be 5 dB below the threshold for TTS, or 177 dB re 1 microPa²-sec maximum energy flux density level in any 1/3-octave band at frequencies above 100 Hz for cetaceans.

II. Summary of Thresholds and Criteria for Impulsive Sounds

The effects, criteria, and thresholds used in the assessment for impulsive sounds are summarized in Table 6. The criteria for behavioral effects without physiological effects used in this analysis are based on use of multiple explosives from live, explosive firing at BT–9 only; no live firing occurs at BT–11.

TABLE 6—EFFECTS, CRITERIA, AND THRESHOLDS FOR IMPULSIVE SOUNDS

Effect	Criteria	Metric	Threshold	Effect
Mortality	Onset of Extensive Lung Injury.	Goertner modified positive impulse	indexed to 30.5 psi-msec (assumes 100 percent small animal at 26.9 lbs).	Mortality.
Injurious Physiological	50 percent Tympanic Membrane Rupture.	Energy flux density	1.17 in-lb/in² (about 205 dB re 1 microPa²-sec).	Level A.
Injurious Physiological	Onset Slight Lung Injury	Goertner modified positive impulse	indexed to 13 psi-msec (assumes 100 percent small animal at 26.9 lbs).	Level A.
Non-injurious Physiological.	TTS	Greatest energy flux density level in any 1/3-octave band (> 100 Hz for toothed whales and > 10 Hz for baleen whales)—for total energy over all exposures.	182 dB re 1 microPa²-sec.	Level B.
Non-injurious Physiological.	TTS	Peak pressure over all exposures	23 psi	Level B.
Non-injurious Behavioral	Multiple Explosions Without TTS.	Greatest energy flux density level in any 1/3-octave (> 100 Hz for toothed whales and > 10 Hz for baleen whales)—for total energy over all exposures (multiple explosions only).	177 dB re 1 microPa²-sec.	Level B.

Take From Explosives

The USMC conservatively modeled that all explosives would detonate at a 1.2 m (3.9 ft) water depth despite the training goal of hitting the target, resulting in an above water or on land explosion. For sources that are detonated at shallow depths, it is frequently the case that the explosion may breech the surface with some of the acoustic energy escaping the water column. The source levels presented in the table above have not been adjusted for possible venting nor does the subsequent analysis take this into account. Properties of explosive sources used at BT–9, including NEW, peak one-third-octave (OTO) source level, the approximate frequency at which the peak occurs, and rounds per burst are described in Table 7. Distances to NMFS harassment threshold levels from these sources are outlined in Table 8.

TABLE 7—SOURCE WEIGHTS AND PEAK SOURCE LEVELS

Source type	NEW	Peak OTO SL	Frequency of peak OTO SL	Rounds per burst
2.75″ Rocket	4.8 lbs	223.9 dB re: 1μPa	~1500 Hertz (Hz)	1
5″ Rocket	15.0 lbs	228.9 dB re: 1μPa	~1000 Hz	1
30 mm	0.1019 lbs	212.1 dB re: 1μPa	~2500 Hz	30
40 mm	0.1199 lbs	227.8 dB re: 1μPa	~1100 Hz	5
G911 Grenade	0.5	213.9 dB re: 1 μPa	~2500 Hz	1

TABLE 8—DISTANCES TO NMFS HARASSMENT THRESHOLDS FROM EXPLOSIVE ORDNANCES

	Behavioral disturbance (177 dB energy)	TTS (23 psi)	Level A (13 psi-msec)	Mortality (31 psi-ms)
2.75″ Rocket HE	N/A	172 m (564 ft)	47 m (154 ft)	27 m (89 ft).
5″ Rocket HE	N/A	255 m (837 ft)	61 m (200 ft)	39 m (128 ft).
30 mm HE	209 m (686 ft)	N/A	10 m (33 ft)	5 m (16 ft).
40 mm HE	144 m (472 ft)	N/A	10 m (33 ft)	5 m (16 ft).
G911 Grenade	N/A	83 m (272 ft)	21 m (33 ft)	10 m (33 ft).

To calculate take, the distances to which animals may be harassed were considered along with dolphin density. The density estimate from Read *et al* (2003) was used to calculate take from munition firing. As described in the *Description of Marine Mammals in the Area of the Specified Activity* section above, this density, 0.183/km², was derived from boat based surveys in 2000 which covered all inland North Carolina waters. Note that estimated density of dolphins at BT–9 and BT–11, specifically, were calculated to be 0.11 dolphins/km², and 1.23 dolphins/km² respectively (Maher 2003), based on boat surveys conducted from July 2002 through June 2003 (excluding April, May, Sept. and Jan.). However, the USMC chose to estimate take of dolphins based on the higher density reported from the summer 2000 surveys (0.183/km^2). Additionally, take calculations for munition firing are based on 100 percent water detonation, although the goal of training is to hit the targets, and no pre-exercise monitoring or mitigation. Therefore, take estimates can be considered conservative.

Based on dolphin density and amount of munitions expended, there is very low potential for Level A harassment and mortality and monitoring and mitigation measures are anticipated to further negate this potential. Accordingly, NMFS is not proposing to issue these levels of take. As portrayed in Table 8 above, the largest harassment zone (Level B) is within 209 m of a detonation in water; however, the USMC has implemented a 1000 m "foul" zone for BT–9 and anywhere within Raritan Bay for BT–11. In total, from firing of explosive ordnances, the USMC is requesting, and NMFS is proposing to issue, the incidental take of 25 bottlenose dolphins from Level B harassment (Table 9).

TABLE 9—NUMBER OF DOLPHINS POTENTIALLY TAKEN FROM EXPOSURE TO EXPLOSIVES BASED ON THRESHOLD CRITERIA

Ordnance type	Level B—behavioral (177dB re 1 microPa^2-s)	Level B—TTS (23 psi)	Level A—Injurious (205 dB re 1 microPa^2-s or 13 psi)	Mortality (30.5 psi)
2.75″ Rocket HE	N/A	4.97	0.17	0.06
5″ Rocket HE	N/A	3.39	0.09	0.03
30 mm HE	2.55	N/A	0.05	0.00
40 mm HE	12.60	N/A	0.16	0.01
G911 Grenade	N/A	0.87	0.03	0.01
Total	15.15	9.23	0.5	0.11

Take From Direct Hit

The potential risk of a direct hit to an animal in the target area is estimated to be so low it is discountable. A Range Air Installation Compatible Use Zone (RAICUZ) study generated the surface area or footprints of weapon impact areas associated with air-to-ground ordnance delivery (USMC 2001). Statistically, a weapon safety footprint describes the area needed to contain 99.99 percent of initial and ricochet impacts at the 95-percent confidence interval for each type of aircraft and ordnance utilized on the BTs. At both BT–9 and BT–11 the probability of deployed ordnance landing in the impact footprint is essentially 1.0, since the footprints were designed to contain 99.99 percent of impacts, including ricochets. However, only 36 percent of the weapon footprint for BT–11 is over water in Rattan Bay, so the likelihood of a weapon striking an animal at the BT in Rattan Bay is 64 percent less. Water depths in Rattan Bay range from 3 m (10 ft) in the deepest part of the bay to 0.5 m (1.6 m) close to shore, so that nearly the entire habitat in Rattan Bay is suitable for marine mammal use (or 36 percent of the weapon footprint).

The estimated potential risk of a direct hit to an animal in the target area is extremely low. The probability of hitting a bottlenose dolphin at the BTs can be derived as follows: Probability = dolphin's dorsal surface area * density of dolphins. The estimated dorsal surface area of a bottlenose dolphin is 1.425 m^2 (or the average length of 2.85 m times the average body width of 0.5 m). Thus, using Read *et al.* (2003)'s density estimate of 0.183 dolphins/km^2, without consideration of mitigation and monitoring implementation, the probability of a dolphin being hit in the waters of BT–9 is 2.61×10^{-7} and of BT–11 is 9.4×10^{-8}. Using the proposed levels of ordnance expenditures at each in-water BT (Tables 4 and 5) and taking into account that only 36 percent of the ordnance deployed at BT–11 is over water, as described in the application, the estimated potential number of ordnance strikes on a marine mammal per year is 0.263 at BT–9 and 0.034 at BT–11. It would take approximately three years of ordnance deployment at the BTs before it would be likely or probable that one bottlenose dolphin would be struck by deployed inert ordnance. Again, these estimates are without consideration to proposed monitoring and mitigation measures.

Take From Vessel and Aircraft Presence

Vessel movement is associated with surface-to-surface exercises, as described in the *Specified Activities* section above, which primarily occurs within BT–11. The USMC is not requesting takes specific to the act of maneuvering small boats within the BTs; however, NMFS has analyzed the potential for take from this activity.

The potential impacts from exposure to vessels are described in the *Vessel and Aircraft Presence* section above. Interactions with vessels are not a new experience for bottlenose dolphins in Pamlico Sound. Pamlico Sound is heavily used by recreational, commercial (fishing, daily ferry service, tugs, *etc.*), and military (including the Navy, Air Force, and Coast Guard) vessels year-round. The NMFS' Southeast Regional Office has developed marine mammal viewing guidelines to educate the public on how to responsibly view marine mammals in the wild and avoid causing a take (*http://www.nmfs.noaa.gov/pr/education/southeast*). The guidelines recommend that vessels should remain a minimum of 50 yards from a dolphin, operate vessels in a predictable manner, avoid excessive speed or sudden changes in speed or direction in the vicinity of animals, and not to pursue, chase, or separate a group of animals. The USMC would abide by these guidelines to the fullest extent practicable. The USMC would not engage in high speed exercises should a marine mammal be detected within the immediate area of the BTs prior to training commencement and would never closely approach, chase, or pursue dolphins. Detection of marine mammals would be facilitated by personnel monitoring on the vessels and those marking success rate of target hits and monitoring of remote camera on the BTs (see Proposed Monitoring and Reporting section).

Based on the description of the action, the other activities regularly occurring in the area, the species that may be exposed to the activity and their observed behaviors in the presence of vessel traffic, and the implementation of measures to avoid vessel strikes, NMFS believes it is unlikely that the operation of vessels during surface-to-surface maneuvers will result in the take of any marine mammals, in the form of either behavioral harassment or injury.

Aircraft would move swiftly through the area and would typically fly approximately 914 m from the water's surface before dropping unguided munitions and above 4,572 m for precision-guided munition bombing. While the aircraft may approach as low as 152 m (500 ft) to drop a bomb this is not the norm and would never been done around marine mammals. Regional whale watching guidelines advise aircraft to maintain a minimum altitude of 300 m (1,000 ft) above all marine mammals, including small odontocetes, and to not circle or hover over the animals to avoid harassment. NMFS' approach regulations limit aircraft from flying below 300 m (1,000 ft) over a humpback whale (*Megaptera novaeangliae*) in Hawaii, a known calving ground, and limit aircraft from flying over North Atlantic right whales closer than 460 m (1509 ft). Given USMC aircraft would not fly below 300 m on the approach, would not engage in hovering or circling the animals, and would not drop to the minimal altitude of 152 m if a marine mammal is in the area, NMFS believes it is unlikely that the operation of aircraft, as described above, will result in take of bottlenose dolphins in Pamlico Sound.

Negligible Impact and Small Numbers Analysis and Determination

Pursuant to NMFS' regulations implementing the MMPA, an applicant is required to estimate the number of animals that will be "taken" by the specified activities (*i.e.,* takes by harassment only, or takes by harassment, injury, and/or death). This estimate informs the analysis that NMFS must perform to determine whether the activity will have a "negligible impact" on the species or stock. NMFS has defined "negligible impact" in 50 CFR 216.103 as: "an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival." A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (*i.e.,* population-level effects). An estimate of the number and manner of takes, alone, is not enough information on which to base a negligible impact determination. NMFS must also consider other factors, such as the likely nature of any responses (their intensity, duration, *etc.*), the context of any responses (critical reproductive time or location, migration, *etc.*), or any of the other variables mentioned in the first paragraph (if known), as well as the number and nature of estimated Level A takes, the number of estimated mortalities, and effects on habitat.

The USMC has been conducting gunnery and bombing training exercises at BT–9 and BT–11 for years and, to date, no dolphin injury or mortality has been attributed these military training exercises. The USMC has a history of notifying the NMFS stranding network when any injured or stranded animal comes ashore or is spotted by personnel on the water. Therefore, stranded animals have been examined by stranding responders, further confirming that it is unlikely training contributes to marine mammal injuries or deaths. Due to the implementation of the aforementioned mitigation measures, no take by Level A harassment or serious injury or mortality is anticipated nor would any be authorized in the IHA. NMFS is proposing; however, to authorize 25 Level B harassment takes associated with training exercises.

The USMC has proposed a 1000-yard (914 m) safety zone around BT–9 despite the fact that the distance to NMFS explosive Level B harassment threshold is 228 yards (209 m). They also would consider an area fouled if any dolphins are spotted within Raritan Bay (where BT–11 is located). The Level B harassment takes allowed for in the IHA would be of very low intensity and would likely result in dolphins being temporarily behaviorally affected by bombing or gunnery exercises. In addition, takes may be attributed to animals not using the area when exercises are occurring; however, this is difficult to calculate. Instead, NMFS looks to if the specified activities occur during and within habitat important to vital life functions to better inform its negligible impact determination.

Read *et al.* (2003) concluded that dolphins rarely occur in open waters in the middle of North Carolina sounds and large estuaries, but instead are concentrated in shallow water habitats along shorelines. However, no specific areas have been identified as vital reproduction or foraging habitat. Scientific boat based surveys conducted throughout Pamlico Sound conclude that dolphins use the areas around the BTs more frequently than other portions of Pamlico Sound (Maher, 2003) despite the USMC actively training in a manner identical to the specified activities described here for years.

As described in the *Affected Species* section of this notice, bottlenose dolphin stock segregation is complex with stocks overlapping throughout the coastal and estuarine waters of North Carolina. It is not possible for the USMC to determine to which stock any individual dolphin taken during training activities belong as this can only be accomplished through genetic testing. However, it is likely that many of the dolphins encountered would belong to the NNCE or SNC stock. These stocks have a population estimate of 919 and 4,818, respectively. NMFS is proposing to authorize 25 takes of bottlenose dolphins in total; therefore, this number represents 2.72 and 0 percent, respectively, of those populations.

Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the mitigation and monitoring measures, NMFS preliminarily finds that the specified USMC AS Cherry Point BT–9 and BT–11 training activities will result in the incidental take of marine mammals, by Level B harassment only, and that the total taking from will have a negligible impact on the affected species or stocks.

Subsistence Harvest of Marine Mammals

Marine mammals are not taken for subsistence use within Pamlico Sound; therefore, issuance of an IHA to the USMC for MCAS Cherry Point training exercises would not have an unmitigable adverse impact on the availability of the affected species or stocks for subsistence use.

Endangered Species Act (ESA)

No ESA-listed marine mammals are known to occur within the action area. Therefore, there is no requirement for NMFS to consult under Section 7 of the ESA on the issuance of an IHA under section 101(a)(5)(D) of the MMPA. However, ESA-listed sea turtles may be present within the action area.

On September 27, 2002, NMFS issued a Biological Opinion (BiOp) on *Ongoing Ordnance Delivery at Bombing Target 9 (BT–9) and Bombing Target 11 (BT–11) at Marine Corps Air Station, Cherry Point, North Carolina.* The BiOp concluded that that the USMC's proposed action will not result in adverse impacts to any ESA-listed marine mammals and is not likely to jeopardize the continued existence of the endangered green turtle (*Chelonia mydas*), leatherback turtle (*Dermochelys coriacea*), Kemp's ridley turtle (*Lepidochelys kempii*), or threatened loggerhead turtle (*Caretta caretta*). No critical habitat has been designated for these species in the action area; therefore, none will be affected. On April 9, 2009, the USMC requested subsequent Section 7 consultation as the aforementioned BiOp was written in 2002. That consultation request is currently being examined by NMFS' Endangered Species Division.

National Environmental Policy Act (NEPA)

On February 11, 2009, the USMC issued a Finding of No Significant Impact for its Environmental Assessment (EA) on MCAS Cherry Point Range Operations. Based on the analysis of the EA, the USMC determined that the proposed action will not have a significant impact on the human environment. If adequate and appropriate, NMFS intends to adopt the USMC's EA to allow NMFS to meet its responsibilities under NEPA for the issuance of an IHA. If the USMC's EA is not adequate, NMFS will supplement the existing analysis and documents to ensure that we comply with NEPA prior to the issuance of the IHA.

Dated: June 1, 2010.

James H. Lecky,

Director, Office of Protected Resources, National Marine Fisheries Service.

[FR Doc. 2010–13748 Filed 6–7–10; 8:45 am]

BILLING CODE 3510–22–P

DEPARTMENT OF DEFENSE

Office of the Secretary

Defense Science Board

AGENCY: Department of Defense (DoD).

ACTION: Notice of advisory committee meeting.

SUMMARY: The Defense Science Board Task Force on the Survivability of DoD Systems and Assets to Electromagnetic Pulse (EMP) and other Nuclear Weapons Effects will meet in closed session on July 15 and 16, 2010, at Fort Belvoir, Virginia. The Task Force will receive, review and discuss presentations on: findings and recommendations of the Congressional EMP Commission, the Defense Science Board Threat Reduction Advisory Committee (TRAC) Task Force findings, recommendations and progress; implementation to date of DoD Instruction 3150.09; the SECDEF 2009 Report to Congress on EMP Survivability; 2010 Strategic Test Resource Management Center Plan for Nuclear Weapons Effects test & evaluation resources; DTRA–NNSA MOU and Joint Program Plan; DoD component updates; and discussion of future activities.

DATES: The meeting will be held on July 15 and 16, 2010.

ADDRESSES: The meeting will be held at the Defense Threat Reduction Agency (DTRA), Defense Threat Reduction Center Building, Brittigan Conference Room, 1252, 8725 John J. Kingman Road, Fort Belvoir, Virginia 22060–6201.

FOR FURTHER INFORMATION CONTACT: LTC Karen Walters, USA, Defense Science Board, 3140 Defense Pentagon, Room 3B888A, Washington, DC 20301–3140, via e-mail at *karen.walters@osd.mil,* or via phone at (703) 571–0082.

SUPPLEMENTARY INFORMATION: The mission of the Defense Science Board is to advise the Secretary of Defense and the Under Secretary of Defense for Acquisition, Technology & Logistics on scientific and technical matters as they affect the perceived needs of the Department of Defense. At these meetings, the Defense Science Board Task Force will act as an independent sounding board to the Joint IED organization by providing feedback at quarterly intervals; and develop strategic and operational plans, examining the goals, process and substance of the plans.

The task force's findings and recommendations, pursuant to 41 CFR 102–3.140 through 102–3.165, will be presented and discussed by the membership of the Defense Science Board prior to being presented to the Government's decision maker.

Pursuant to 41 CFR 102–3.120 and 102–3.150, the Designated Federal Officer for the Defense Science Board will determine and announce in the **Federal Register** when the findings and recommendations of the July 15–16, 2010, meeting are deliberated by the Defense Science Board.

Interested persons may submit a written statement for consideration by the Defense Science Board. Individuals submitting a written statement must submit their statement to the Designated Federal Official (*see* **FOR FURTHER INFORMATION CONTACT**), at any point, however, if a written statement is not received at least 10 calendar days prior to the meeting, which is the subject of this notice, then it may not be provided to or considered by the Defense Science Board. The Designated Federal Official will review all timely submissions with the Defense Science Board Chairperson, and ensure they are provided to members of the Defense Science Board before the meeting that is the subject of this notice.

Dated: June 3, 2010.

Mitchell S. Bryman,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2010–13770 Filed 6–7–10; 8:45 am]

BILLING CODE 5001–06–P

DEPARTMENT OF DEFENSE

Office of the Secretary

[Docket ID: DOD–2010–OS–0075]

Privacy Act of 1974; System of Records

AGENCY: Department of Defense (DoD).

ACTION: Notice to amend a system of records.

SUMMARY: The Office of the Secretary of Defense is proposing to amend a system of records notice in its existing inventory of records systems subject to the Privacy Act of 1974, (5 U.S.C. 552a), as amended.

DATES: The changes will be effective on July 8, 2010, unless comments are received that would result in a contrary determination.

ADDRESSES: You may submit comments, identified by docket number and title, by any of the following methods:

- *Federal Rulemaking Portal: http://www.regulations.gov.* Follow the instructions for submitting comments.
- *Mail:* Federal Docket Management System Office, 1160 Defense Pentagon, Washington, DC 20301–1160.

Instructions: All submissions received must include the agency name and docket number for this **Federal Register** document. The general policy for comments and other submissions from members of the public is to make these submissions available for public viewing on the Internet at *http://www.regulations.gov* as they are received without change, including any personal identifiers or contact information.

FOR FURTHER INFORMATION CONTACT: Ms. Cindy Allard at (703) 588–6830.

SUPPLEMENTARY INFORMATION: The Office of the Secretary of Defense systems of records notices subject to the Privacy Act of 1974, (5 U.S.C. 552a), as amended, have been published in the **Federal Register** and are available from the Chief, OSD/JS Privacy Office, Freedom of Information Directorate, Washington Headquarters Services, 1155 Defense Pentagon, Washington, DC 20301–1155.

The specific changes to the records system being amended is set forth below followed by the notice, as amended, published in its entirety. The proposed