

1 **1. REPORT OF ACTIVITIES**

2 **1.1 INTRODUCTION**

3 The United States Marine Corps (USMC) has prepared this Annual Marine Mammal Compliance
4 Report in accordance with the Incidental Harassment Authorization issued by the National
5 Marine Fisheries Service (NMFS) on 18 November 2010. This report summarizes the type and
6 amount of training activities taking place within two in-water bombing targets (BTs) located in
7 Pamlico Sound, North Carolina (NC), also known as the Brant Island Target (BT-9) and the
8 Rattan Bay BTs of the Piney Island Bombing Range/Complex (BT-11) (Figure 1-1). These
9 bombing targets are under the control and management of Marine Corps Air Station (MCAS),
10 Cherry Point.

11 The United States Marine Corps (USMC) supported and conducted operations at the MCAS
12 Cherry Point Range Complex (Figure 1-1) during the reporting period. The focus of this
13 document includes only those training missions occurring on the water ranges or with impact
14 areas over the water because of their potential to affect marine mammals. These missions
15 include:

- 16 • **Munitions Firing.** Units conduct air-to-ground, surface-to-surface, and air-to-surface
17 munitions delivery at targets that are located on land or in water. Air-to-ground firing
18 does not impact the water and is not analyzed or discussed further in this document.
- 19 • **Small Boat Maneuvers.** Units operate Small Unit River Craft, Combat Rubber Raiding
20 Craft, Rigid Hull Inflatable Boats, Patrol Craft, and many other versions of these types of
21 boats. These boats use inboard or outboard engines with either propeller or water jet
22 propulsion.

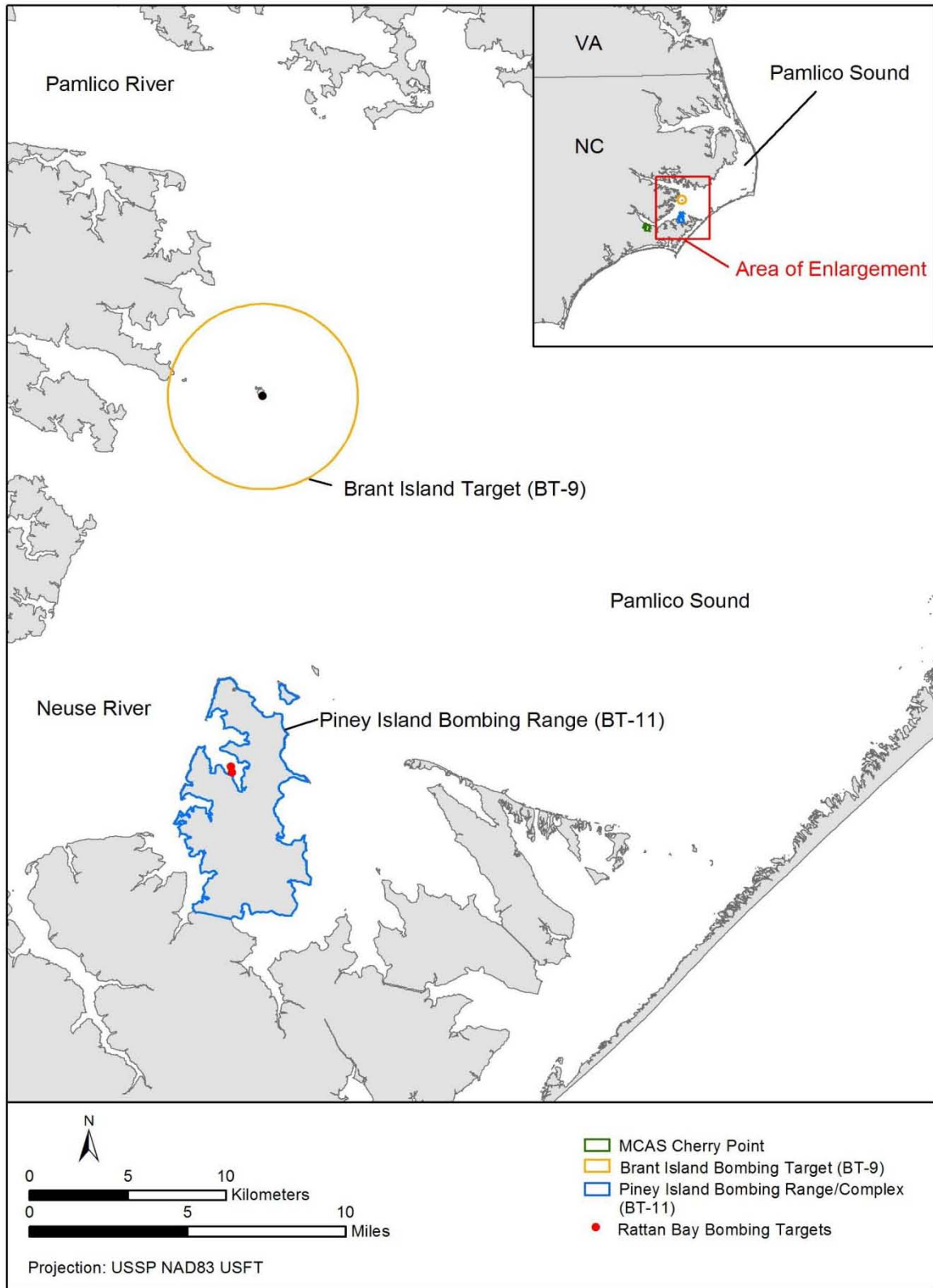
23 Water range areas addressed within this IHA report include the BTs located in Pamlico Sound,
24 NC, known as the Brant Island Target (BT-9) and the Rattan Bay BTs of the Piney Island
25 Bombing Range/Complex (BT-11) [Figure 1-1]. These BTs are used to train military personnel
26 to deliver ordnance on a target. Ordnance is primarily delivered from aircraft (fixed-wing and
27 rotary wing) but is also occasionally delivered from small military watercraft. **Error! Reference**
28 **source not found.** provides a general description of the training activities and munitions used on
29 BT-9 and BT-11.

30 **Table 1-1. Description of Bombing Targets**

Range Asset	Training Operation	Type of Munitions Used
BT-9 (Brant Island Target)	Water-based target range for air-to-surface and surface-to-surface warfare training, including bombing, strafing, special (laser systems) weapons, and surface fires, using non-explosive and explosive ordnance; also provides a mining exercise area	Small Arms, Large Arms (live and inert), Bombs (live and inert), and Pyrotechnics
BT-11 (Piney Island Bombing Range)	Complex of land- and water-based targets designed to provide training in the delivery of conventional (non-explosive) and special (laser systems) weapons; secondary use for surface-to-surface training by small military watercraft	Small Arms, Large Arms (inert), Bombs (inert), and Pyrotechnics

31

INCIDENTAL HARASSMENT AUTHORIZATION REPORT
Marine Corps Air Station, Cherry Point



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Figure 1-1. MCAS Cherry Point bombing targets BT-9, Brant Island Bombing Target, and BT-11, Piney Island Bombing Range/Complex (33 CFR 334.420).

INCIDENTAL HARASSMENT AUTHORIZATION REPORT
Marine Corps Air Station, Cherry Point

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2 The following subsections provide detailed information about the three MCAS Cherry Point
3 mission categories included in this report.

4 **1.2 MUNITIONS FIRING**

5 Munitions firing training conducted on the water ranges include surface-to-surface firing (from
6 ship or boat to surface targets) and air-to-surface firing (from aircraft to surface water targets).
7 This activity occurs year round with no seasonal restrictions. There are many types of ordnance
8 used at BT-9 and BT-11 including practice bombs, rockets, flares, chaff, gun ammunition, and
9 grenades (Table 1-1). Explosive ordnance is authorized only at BT-9; the standard operating
10 procedure sets the maximum limit of 100 pounds (lbs) trinitrotoluene (TNT) equivalent for
11 explosive ordnance at BT-9. Net explosive weights (NEW) currently used at BT-9 range from
12 0.1019 to 15 lbs.

13 Practice bombs are non-explosive and are used at both targets. Lighter practice bombs (less than
14 500 lbs) contain a small amount of an explosive marking charge in a signal cartridge that allows
15 the target hit to be detected by range scorekeepers and the pilot. Explosives in the signal
16 cartridge are less than 1 lb TNT equivalent (USMC 2001a). Table 1-2 lists the types of
17 munitions, by category, expended at the MCAS Cherry Point Range Complex. It should be noted
18 that all munitions fired on the BT-11 range are non-explosive with the exception of the small
19 explosives in the single charges.

INCIDENTAL HARASSMENT AUTHORIZATION REPORT
Marine Corps Air Station, Cherry Point

Table 1-2. Munitions Categories Authorized for Use at the MCAS Cherry Point Range Complex.

Small Arms	Large Arms	Missiles¹	Rockets	Bombs	Pyrotechnics	
.22 cal-Live	20 mm-Inert	Hellfire	2.75-inch Rocket-Inert	G911 Grenade-Live	Chaff	
5.56 mm-Live	25 mm-Inert	Tube-launched, optically tracked, wire- guided (TOW)	2.75-inch Rocket Illumination-Inert	Hand Grenade-Inert	LUU-2	
7.62 mm-Live	30 mm-Inert		2.75-inch Rocket White Phosphorous-Inert	Non-Lethal Stun Grenade- Inert	MI27A1-Parachute Flare	
9 mm-Live	30 mm-Live		2.75-inch Rocket-Live	BDU-48 10 lb-Inert	Self Protection Flare	
.40 cal-Live	40 mm-Inert		5-inch Rocket-Inert	BDU-33 25 lb-Inert	Signal Illuminations-Inert	
.45 cal-Live	40 mm-Live		5-inch Rocket White Phosphorous-Inert	MK-48-Inert	Simulated Booby Traps- Inert	
.50 cal-Live	40 mm Illumination- Inert		5-inch Rocket-Live	MK-76 25 lb-Inert	Smokey Sams	
12 Gauge-Live	105 mm Target Practice-Inert 105mm 40 lb-Live			LGTR 90 lb-Inert		
				BDU-45 500 lb-Inert		
				BDU-50 500 lb-Inert		
				GBU-12 500 lb-Inert		
			MK-82 500 lb-Inert			
			BDU-38 750 lb-Inert			
			GBU-16 1,000 lb-Inert			
				MK-83 1,000 lb-Inert		

Note: 1. Two types of missiles, Hellfire and TOW, were previously approved for use at BT-9 per Air Station Order P3570.2R; however, use of these missiles at MCAS Cherry Point has been cancelled since Fiscal Year (FY) 2005 due to operational limitations imposed by an insufficient weapon safety footprint at the water range.

INCIDENTAL HARASSMENT AUTHORIZATION REPORT
Marine Corps Air Station, Cherry Point

1.2.1 Surface-to-Surface

Gunnery exercises are the only category of surface-to- surface activities currently conducted within the MCAS Cherry Point BTs.

- **Gunnery Exercise:** A small boat, typically operated by Special Boat Team personnel, uses 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. Boats conducting surface-to-surface firing activities will typically use 7.62 millimeter (mm) or .50 caliber (cal) machine guns; 40 mm Grenade machine guns or G911 Concussion hand grenades. 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 most common exercise target used is BT-9. A target is not used for the G911 Concussion grenade, as the goal is to learn how to throw it into the water.

1.2.2 Air-to-Surface

There are four types of air-to-surface activities conducted within the MCAS Cherry Point BTs. These training activities are grouped into either mine laying; bombing; gunnery or rocket exercises.

- **Mine Laying:** These activities involve the use of a fixed wing aircraft deploying inert mine shapes in an offensive or defensive pattern. Mine laying operations are regularly conducted in the waters in the vicinity of BT-9.
- **Bombing Exercise:** During this exercise fixed wing aircraft deliver bombs against surface maritime targets, day or night, with the goal of destroying or disabling enemy ships or boats. Air-to-surface bombing exercises employ 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).
- **Gunnery Exercise:** Rotary wing gunnery and fixed wing exercises are also conducted. 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.

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. 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.

INCIDENTAL HARASSMENT AUTHORIZATION REPORT
Marine Corps Air Station, Cherry Point

- **Rocket Exercise:** Fixed- and rotary-wing aircraft crews launch rockets at surface maritime targets, day and night, with the goal of destroying or disabling enemy ships or boats. These operations employ 2.75-inch and 5-inch rockets.

Table 1-3 provides the total number of activities by mission type for the bombing targets.

Table 1-3. Aircraft and Boat Sorties by Mission Type

Mission Type	BT-9	BT-11
Air –to-Surface	1,554	4,251
Surface-to-Surface (Boats)	223	105
Total	1,777	4,356

1.2.3 Quantity and Accuracy of Ordnance Used

The total amount of ordnance expended at BT-9 and BT-11 under the term of this IHA are 878,625 and 693,612 respectively (Table 1-4 and Table 1-5). The amounts of ordnance expended at the BTs account for all use of the targets, including Navy use. 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 high explosive munitions are used at BT-11.

Table 1-4 Ordnance Usage at BT-9

Munition Expenditures	Total No. of Rounds	No. of Explosive (HE) Rounds Having an Impact on the Water	Net Explosive Weight (lb)
Small Arms Rounds Excluding .50 cal	355718	N/A	N/A
.50 cal	410815	N/A	N/A
Large Arms Rounds - Live	480	30mm HE: 40mm HE: 480	
Large Arms Rounds - Inert	108811	N/A	N/A
Rockets - Live	48	2.75" Rocket: 48 5" Rocket: 0	
Rockets - Inert	185	N/A	N/A
Bombs and Grenades - Live	0	G911 Grenade:	
Bombs and Grenades - Inert	2086	N/A	N/A
Pyrotechnics	482	N/A	N/A
Total	878625		N/A

INCIDENTAL HARASSMENT AUTHORIZATION REPORT
Marine Corps Air Station, Cherry Point

Table 1-5 Ordnance Usage at BT-11

Munitions Expenditures	Total No. of Rounds
Small Arms Rounds Excluding .50 cal	363899
.50 cal	246255
Large Arms Rounds	79531
Rockets	2018
Bombs and Grenades	1697
Pyrotechnics	212
Total	693612

2.0 MARINE MAMMAL OBSERVATIONS

The USMC Cherry Point Range Complex Monitoring plan provided the basis for marine mammal observations during the reporting period. Marine mammals were observed on two occasions by maintenance vessels engaged in target maintenance. No marine mammals were observed during range sweeps, air to surface activities, surface to surface activities (small boats), or adhoc via range cameras.

The lack of dolphin observations was tested against prior year data to gauge against monitoring strategies employed during the reporting period. Using the same detection techniques as provided in the monitoring plan, marine mammal observation data from calendar year 2010 for July, September, and October (months in which observations were made) demonstrate a clear ability to detect dolphins in the waters around the bombing targets. These observations were made, one each, by airborne Range sweeps, range cameras, and small boats.

3.0 EFFECTIVENESS OF MONITORING

The marine mammal and protected species monitoring plan for the USMC Cherry Point Range Complex was developed based upon an existing Biological Opinion with NMFS for the protection of threatened and endangered species and as coordinated with NMFS during the IHA application process. The procedures in place to detect marine mammals on range prior to and during surface-to-surface and air-to-surface training are effective and meet the mitigation and monitoring requirements set forth by the IHA.