

2021 ANNUAL REPORT ON EGLIN GULF TEST AND TRAINING RANGE (EGTTR) MISSION ACTIVITIES:

PROTECTED MARINE SPECIES MONITORING AND MITIGATION RESULTS



PREPARED FOR:
National Marine Fisheries Service
Office of Protected Resources
&
Southeast Regional Office
Protected Resources Division

PREPARED BY:
Department of the Air Force
96 CEG/CEIEA
Eglin Natural Resources Office
501 DeLeon Street, Suite 101
Eglin AFB, FL 32542-5133

MARCH 2022
FINAL REPORT

This page is intentionally left blank



PRINTED ON RECYCLED PAPER

TABLE OF CONTENTS

	<u>Page</u>
Executive Summary	1
1. Introduction	2
1.1 Human Safety Procedures	3
1.2 General Mitigation and Monitoring Requirements	3
2. AFSOC – Air-to-Surface (A-S) Gunnery Training	4
2.1 Mission Set-Up.....	5
2.2 Mitigation and Monitoring Requirements.....	5
2.3 Description of AFSOC A-S Gunnery Training Activities	7
2.4 AFSOC Mission Summary.....	8
3. 780 th Test Squadron (780 TS).....	8
3.1 Mission Set-Up.....	9
3.1.1 Spike NLOS Mission	9
3.1.2 Navy JAGM Mission	10
3.2 Mitigation and Monitoring Requirements.....	12
3.3 Description of 780 TS Missions.....	14
3.3.1 Spike NLOS Mission	14
3.3.2 Navy JAGM Mission	18
3.4 780 TS Mission Summary.....	20
4. 96 Operations Group (96 OG).....	21
4.1 Mission Set-Up.....	21
4.1.1 Rapid Dragon Mission	21
4.2 Mitigation and Monitoring Requirements.....	23
4.3 Description of 96 OG Mission	25
4.3.1 Rapid Dragon Mission	25
4.4 96 OG Mission Summary.....	27
5. 86 th Fighter Weapons Squadron (86 FWS) – Maritime Weapons Systems Evaluation Program (WSEP)	28
6. 413 th Flight Test Squadron (413 FLTS)	28
7. Summary of all EGTTR Mission Activities	28
8. Effectiveness of Mitigation and Monitoring Requirements	29
9. Protected Marine Species Stranding Reports	29
10. Conclusion.....	31
11. References	33
12. Signatures	34

Appendix A.....	1
-----------------	---

LIST OF TABLES

Table 1-1. Annual Marine Mammal Takes Authorized in the EGTTR LOA.....	2
Table 1-2. Sea Turtle Take Authorizations Included in the ITS of the EGTTR PBO	2
Table 2-1. AFSOC Gunnery Training Mission Category Days.....	5
Table 2-2. Monitoring Area Radii for Gunnery Missions	6
Table 2-3. Distance in Meters to NMFS Harassment Thresholds for Marine Mammals	6
Table 2-4. Summary of Air-To-Surface Gunnery Missions for 2021	7
Table 2-5. Comparison of Permitted vs. Actual Level of A-S Gunnery Mission Activities	8
Table 3-1. 780 TS Weapons Testing Mission Category Days.....	12
Table 3-2. Distance in kilometers to NMFS Harassment Thresholds for Marine Mammals	12
Table 3-3. Comparison of Permitted vs. Actual Level of 780 TS Mission Activities.....	20
Table 4-1. 96 OG Future Testing Mission Category Days	23
Table 4-2. Distance in kilometers to NMFS Harassment Thresholds for Marine Mammals	24
Table 4-3. Pre-Mission Survey Results from Rapid Dragon Mission	26
Table 4-4. Comparison of Permitted vs. Actual Level of 96 OG Future Mission Activities	27
Table 7-1. Summary of Survey Results and Live Weapon Releases in the EGTTR.....	28
Table 9-1. 2021 Marine Mammal Stranding Records	29
Table 9-2. 2021 Sea Turtle Stranding Records for Eglin AFB.....	31

LIST OF FIGURES

Figure 2-1. Location of W-151A in the EGTTR	5
Figure 3-1. Spike NLOS Mission Set-Up	9
Figure 3-2. Human Safety Zone for Spike NLOS Mission	10
Figure 3-3. Navy JAGM Mission Set-Up.....	11
Figure 3-4. Human Safety Zone for Navy JAGM Mission	11
Figure 3-5. <i>Sturgeon</i> Survey Route for Spike NLOS Mission	15
Figure 3-6. <i>Ground Control</i> Survey Route for Navy JAGM Mission.....	18
Figure 4-1. Rapid Dragon Mission Area	22
Figure 4-2. Rapid Dragon Mission Set-Up.....	22
Figure 4-3. Human Safety Zone for Rapid Dragon Mission	23
Figure 4-4. Survey Route for Rapid Dragon Mission.....	25
Figure 9-1. Cumulative Numbers of Stranded Sea Turtles in Okaloosa County during 2021 (Ongoing) and the Previous 5-year and 10-year Averages.....	30

ACRONYMS AND ABBREVIATIONS

86 FWS	86 th Fighter Weapons Squadron
413 FLTS	413 th Flight Test Squadron
780 TS	780 th Test Squadron
96 OG	96 th Operations Group
AF	Air Force
AFB	Air Force Base
AFSOC	Air Force Special Operations Command
BA	Biological Assessment
BO	Biological Opinion
CCF	Central Control Facility
EGTTR	Eglin Gulf Test and Training Range
FLSTSSN	Florida Sea Turtle Stranding and Salvage Network
ft	feet
GPS	Global Positioning System
GRATV	Gulf Range Armament Test Vessel
HSMST	High Speed Maneuverable Surface Target
IHA	Incidental Harassment Authorization
ITS	Incidental Take Statement
JAGM	Joint Air-to-Ground Missile
JASSM	Joint Air-to-Surface Standoff Missile
JDAM	Joint Direct Attack Munition
km	kilometers
lb	pound
M	Meter
NMFS	National Marine Fisheries Service
NOTMAR	Notice to Mariners
NPV	Non-participating Vessel
NRO	Natural Resources Office
PAM	Passive Acoustic Monitoring
PBO	Programmatic Biological Opinion
PTS	Permanent Threshold Shift
SDB	Small Diameter Bomb
SDZ	Surface Danger Zone
Spike NLOS	Spike Non Line of Sight
SRI	Santa Rosa Island
TTS	Temporary Threshold Shift
UAS	Unmanned Aerial System
USSOCOM	United States Special Operations Command
WSEP	Weapon Systems Evaluation Program
ZOI	Zone of Influence

Executive Summary

Eglin Natural Resources Office (NRO) has prepared this report in accordance with the Eglin Gulf Test and Training Range (EGTTR) Letter of Authorization (LOA) under the Marine Mammal Protection Act and the Programmatic Biological Opinion/Incidental Take Statement (PBO/ITS) under the Endangered Species Act. The LOA and PBO/ITS include mitigation and monitoring procedures to reduce the potential for adverse impacts to marine mammals and federally listed species. This report describes the implementation of the mitigation and monitoring procedures, the results of pre- and post-mission surveys, a summary of each mission event, describes any potential take that may or may not have occurred, and analyzes the overall effectiveness of these measures.

A total of twelve mission days for missiles/bombs were attempted by two user groups, 780th Test Squadron (780 TS) and the 96th Operations Group (96 OG), in the EGTTR during calendar year 2021. Weapon releases occurred on three live mission days; nine additional live days were planned, but due to both weather and/or technical issues, no weapon releases occurred. Eglin NRO coordinated with each proponent prior to the missions to communicate survey requirements and established survey areas for each mission day, based on the mitigation measures developed and outlined in the LOA and PBO. For ten Air Force Special Operations Command (AFSOC) gunnery missions, pre- and post-mission surveys were conducted by trained aircrew using techniques and procedures that have been used according to previous LOAs. For 780 TS and 96 OG missions, pre- and post-mission surveys were conducted by between one and two survey vessels, depending on the size of the survey area for each mission. For the 96 OG mission and two 780 TS missions, an Eglin NRO representative observed live video feed from cameras on the instrumentation barge and other support boats during the missions from the monitoring facility at Test Site A-5 or from Eglin's Central Control Facility (CCF). Eglin NRO anticipates the ability to continue monitoring missions from CCF in future years.

The only species observed across all pre- and post-mission surveys were dolphins. No sea turtles were observed. All sightings occurred during pre-mission surveys. Individual dolphins that were observed left the ZOI prior to start of mission. No protected marine species were observed during either missions or post-mission surveys. For all live missions in the EGTTR, the safety box boundaries (the survey areas) extended well-beyond the ZOIs for mortality, serious injury, permanent/temporary injury, impairment, and some behavioral thresholds for marine mammals and sea turtles. Therefore, Eglin NRO believes no marine mammal takes occurred as a result of 2021 EGTTR missions with live munitions, although behavioral responses of some sea turtles was possible but unquantifiable under consultation terms and conditions.

Eglin NRO believes all mitigation and monitoring measures were successfully implemented and were effective in protecting marine mammals and sea turtles from negative impacts associated with live detonations during 2021. Furthermore, based on an analysis of marine mammal and sea turtle stranding data for 2021, Eglin NRO believes that additional impacts from mission activities were not apparent beyond what was observed and reported during post-mission surveys.

1. Introduction

This report has been prepared in compliance with the Letter of Authorization (LOA) and Programmatic Biological Opinion (PBO)/Incidental Take Statement (ITS) issued by the National Marine Fisheries Service (NMFS) for mission activities in the Eglin Gulf Test and Training Range (EGTTR). The EGTTR LOA is valid from February 13, 2018 through February 12, 2023 (Federal Register 83(27): 5545-5571, February 8, 2018). The EGTTR Programmatic PBO/ITS was issued on January 13, 2017 (Consultation No. FPR-2016-9151) by the NMFS Office of Protected Resources, ESA Interagency Cooperation Division. Refer to *Table 1-16 in the EGTTR LOA Request*, *Table 1 in the LOA*, and *Table 14 in the EGTTR PBO* for a list of all live weapon allotments authorized in the EGTTR.

The EGTTR LOA addressed the potential for impacts to two species of marine mammals: bottlenose dolphins and Atlantic spotted dolphins. Eglin was authorized Level A Harassment takes in the form of slight lung injury and Permanent Threshold Shift (PTS). Eglin was also authorized Level B Harassment takes in the form of Temporary Threshold Shift (TTS) and Behavioral impacts. The annual numbers of marine mammal takes authorized in the LOA are shown in Table 1-1 below.

Table 1-1. Annual Marine Mammal Takes Authorized in the EGTTR LOA

Species	Level A Harassment		Level B Harassment	
	Slight Lung Injury	PTS (SEL)	TTS (SEL)	Behavioral
Bottlenose dolphin	2	7	220	315
Atlantic spotted dolphin	0	2	85	120
TOTAL	2	9	305	435

PTS = permanent threshold shift; TTS = temporary threshold shift; SEL = sound exposure level

The EGTTR PBO addressed the potential for impacts to four sea turtle species and included an ITS for lethal and non-lethal takes of loggerhead, Kemp's ridley, leatherback, and green sea turtles. The annual numbers of sea turtle takes authorized in the ITS are shown in Table 1-2 below. In 2020 Eglin NRO received concurrence from NMFS regarding NRO's "may effect, but not likely to adversely affect" determination for the two recently listed species, oceanic whitetip shark and giant manta ray; no takes were therefore authorized for those species.

Table 1-2. Sea Turtle Take Authorizations Included in the ITS of the EGTTR PBO

Species	Mortality & Serious Injury	Impairment	Disturbance	Behavioral Response
Green sea turtle – North Atlantic DPS	28	39	1,056	11,139
Kemp's ridley sea turtle	29	40	1,079	10,905
Loggerhead sea turtle – Northwest Atlantic DPS	57	79	2,148	22,610
Leatherback sea turtle	10	17	436	5,257

DPS = distinct population segment

1.1 Human Safety Procedures

Prior to missions that require a closure of any portion of the Gulf of Mexico, Eglin AFB issues a Notice to Mariners (NOTMAR) describing to all local vessels the upcoming activities which includes a map showing the boundaries of the human safety zone. All boat captains leaving the East Pass near Destin, FL are provided with maps and GPS points of the safety zone before they enter the Gulf. Up to 25 Air Force (AF) vessels may conduct range clearing activities for at least two hours before the mission starts to inform and when necessary, escort civilian vessels outside the safety box. Depending on the weapons being deployed, the size and shape of the safety box varies, therefore the number of boats needed to secure the perimeter also varies. The human safety zone restriction also applies to vessels conducting pre-mission surveys for protected marine species (Refer to Section 1.2 below). Safety and survey boat captains maintain radio contact with each other and the Eglin Tower on Test Site A-13B on Santa Rosa Island (SRI Tower) to provide, receive, and relay information needed to clear the range. Once survey boats have completed pre-mission surveys for protected marine species, they must immediately exit the safety box and typically assist the guard boats with enforcing the safety box. Missions cannot begin until it is confirmed that the entire safety box is clear of humans. During the missions, the safety and survey boats remain at specific guard locations along the perimeter of the human safety box to restrict boat access into the range, until the mission is completed.

Gunnery missions conducted by the Air Force Special Operations Command (AFSOC) and the 413th Flight Test Squadron (413 FLTS) typically do not require vessel support to clear the Gulf of humans. The main aircraft platforms these groups use are gunships that are equipped with ultra long-range multi-sensor, multi-spectral imaging and targeting systems with high-sensitivity color imaging that provide the capabilities to sufficiently survey the mission areas for the presence of non-participating vessels and protected marine species. Moreover, these aircraft are capable of loitering on site for the amount of time necessary to identify and move clear of areas with either humans or protected marine species.

1.2 General Mitigation and Monitoring Requirements

Eglin NRO and NMFS developed mission-specific mitigation and monitoring requirements during the consultation processes to minimize the potential for adverse impacts to protected marine species. Eglin committed to visually survey mission areas to ensure they are clear of protected marine species before live missions begin. The size of the survey area depends on the type of weapons being dropped and the detonation scenario (i.e., surface or subsurface detonation). *The discussion of each mission activity in the following sections includes how Eglin NRO determined what survey areas were needed.*

All personnel conducting visual surveys for protected marine species are required to complete a training course in identifying marine species, annually. The training includes a summary of applicable environmental laws, consequences of non-compliance, description of an observer's roles, pictures and descriptions of protected marine species and protected marine species indicators, example survey techniques, recommended equipment, and reporting procedures. The training must be given by Eglin NRO biologists. In some cases, training slides are sent directly to

the training manager for select user groups, with the requirement that computer-generated certificates of completion for each prospective observer must be sent to Eglin NRO. During the 2021 calendar year, 24 observers completed their annual training and sent their completed certificates to Eglin NRO, and 4 boat captains/observers completed an in-person/virtual training hosted by Eglin NRO.

For vessel-based surveys, all boat captains and observers participated in previous Maritime Strike and Maritime Weapon Systems Evaluation Program (WSEP) missions conducted annually from 2013 through 2017. As a result, completion of this training requirement in 2021 served as a refresher course. The vessels and associated crew designated specifically for protected marine species monitoring for all live EGTTR missions in 2021 were *Ground Control* and *Sturgeon*.

For aerial surveys conducted by mission personnel on gunships, the training slides are provided to aircrew as part of the standard annual unit training requirements. Digitally-signed training certificates for designated observers are provided to Eglin NRO certifying that the training has been completed and personnel are aware of their observer roles and responsibilities, including reporting procedures. Eglin NRO maintains a list of personnel with updated training certificates.

The following sections summarize activities of each user group that released live weapons in the EGTTR, describe the implementation of the mitigation and monitoring requirements, identify the levels of take that occurred, and assess the effectiveness of Eglin's mitigation and monitoring procedures.

2. AFSOC – Air-to-Surface (A-S) Gunnery Training

AFSOC conducts air-to-surface gunnery training activities with multiple types of munitions primarily in Warning Area-151A (W-151A) in the EGTTR (Figure 2-1). Gunnery rounds include 25-millimeter (mm) high explosive incendiary (HEI), 30-mm HEI, 40-mm HEI, and 105-mm HEI rounds. Net explosive weight (NEW) ranges from about 0.07 to 4.7 pounds. The Air Force developed for use in the EGTTR a 105-mm training round (TR) that contains less than 10 percent of the amount of explosive material contained in the 105-mm full-up (FU) round.

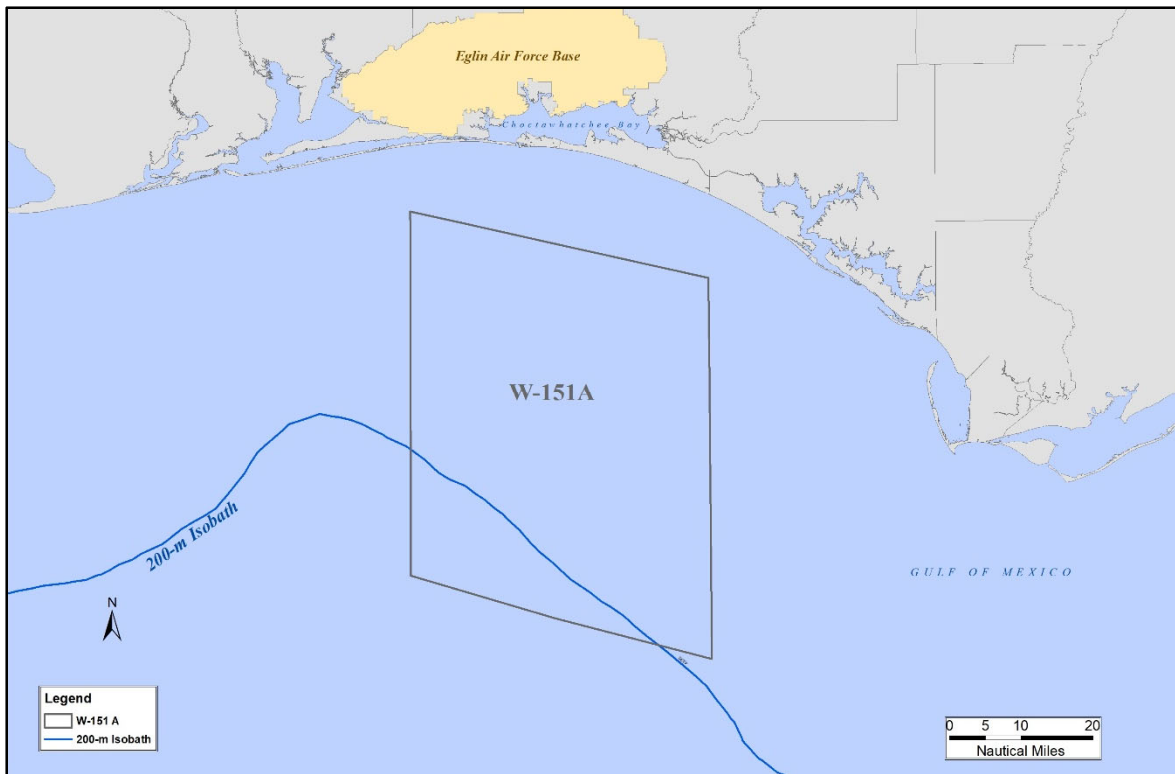


Figure 2-1. Location of W-151A in the EGTR

2.1 Mission Set-Up

As stated in Section 1.1, the gunships contain sensor systems that can be used to reliably clear areas of the Gulf for non-participating vessels and protected marine species. In addition, these training units typically do not require the use of target boats, but instead deploy MK-25 marking flares as targets. Therefore, minimal equipment and assets are needed to support these missions.

2.2 Mitigation and Monitoring Requirements

AFSOC has been conducting air-to-surface gunnery training operations in the EGTR under various MMPA Authorizations since 2006. Accordingly, they have successfully implemented mitigation and monitoring requirements for the protection of marine mammals and sea turtles, which includes conducting aerial surveys immediately prior to commencement of firing and ramp-up procedures when using multiple-sized munitions. Table 2-1 lists the Mission Category Days for the AFSOC gunnery missions as described in the EGTR LOA application.

Table 2-1. AFSOC Gunnery Training Mission Category Days

Mission Category Day	Munition	NEW (lbs)	Detonation Type	Munitions per Day	Mission Days/Year	Total Munitions/Year
D	105 mm HE (FU)	4.7	Surface	30	25	750
	40 mm HE	0.87	Surface	64		1,600
	30 mm HE	0.1	Surface	500		12,500
	25 mm HE	0.067	Surface	560		14,000
E	105 mm HE (TR)	0.35	Surface	30	45	1,350
	40 mm HE	0.87	Surface	64		2,880

Mission Category Day	Munition	NEW (lbs)	Detonation Type	Munitions per Day	Mission Days/Year	Total Munitions/Year
	30 mm HE	0.1	Surface	500		22,500
	25 mm HE	0.067	Surface	560		25,200
Total					70	80,780

FU = Full Up; HE = High Explosive; lbs = pounds; mm = millimeter; NEW= net explosive weight; TR = Training Round

Table 2-2. Monitoring Area Radii for Gunnery Missions

Aircraft	Gunnery Round	Monitoring Area Radius	Monitoring Altitude	Operational Altitude
AC-130 gunship	25 mm, 30 mm, 40 mm, 105 mm (FU and TR)	5 NM (9,260 m)	6,000 ft	15,000 – 20,000 ft
CV-22 Osprey	.50 cal, 7.62 mm	3 NM (5,556 m)	1,000 ft	1,000 ft

cal = caliber; ft = feet; FU = full up; m = meters; mm = millimeter; NM = nautical miles; TR = Training Round

Table 2-2 shows the ranges from targets for monitoring of gunnery missions. As Eglin NRO described in the LOA request, missions that consist solely of gunnery testing and training operations will survey larger areas than those based solely on acoustic impact zones at a Level A Harassment/PTS threshold. This is because the Air Force can conduct aerial surveys of larger areas from mission aircraft during these activities. Monitoring procedures are described in *Section 11.2.2* of the LOA Application (Table 2-2, Table 2-3). This conservative approach covers marine mammals through behavioral response and covers sea turtles through impairment and disturbance under Eglin NRO's mitigation requirements for AFSOC gunnery missions.

Table 2-3. Distance in Meters to NMFS Harassment Thresholds for Marine Mammals

Mission Category Day	Mortality ¹		Level A Harassment				Level B Harassment	
			Slight Lung Injury ²		GI Tract Injury ³	PTS ^{4, 5} (SEL)	TTS ^{4, 6} (SEL)	Behavioral ⁷ (SEL)
	BND	ASD	BND	ASD				
D	24	30	55	67	59	254	982	1,413
E	10	13	24	30	34	232	878	1,252

¹ Positive impulse metric from the Goertner mortality model equation that uses the mass of a newborn calf of affected species

² Positive impulse metric from the Goertner injury model equation that uses the mass of a newborn calf of affected species

³ Peak pressure metric of 237 dB re 1 μ Pa (unweighted SPL)

⁴ These thresholds use dual criteria, one based on cumulative weighted SEL and one based on peak unweighted SPL. SEL metric was used because the distance was larger than SPL.

⁵ Weighted SEL metric of 185 dB re 1 μ Pa²·s

⁶ Weighted SEL metric of 170 dB re 1 μ Pa²·s

⁷ Weighted SEL metric of 165 dB re 1 μ Pa²·s

ASD = Atlantic spotted dolphin; BND = bottlenose dolphin; dB re 1 μ Pa = decibels referenced to 1 micropascal; dB re 1 μ Pa²·s = decibels referenced to 1 micropascal-squared second; GI = gastrointestinal; NMFS = National Marine Fisheries Service; PTS = permanent threshold shift; SEL = sound exposure level; SPL = sound pressure level; TTS = temporary threshold shift

Prior to beginning firing activities, the gunships conduct low-altitude orbits around the prospective firing location to ensure the ZOI is clear of protected marine species. At least two orbits must be completed before climbing to operational altitudes. The aircraft's sensors are turned on for the duration of the pre-mission survey, the mission, and the post-mission survey. Gunship aircrews have consistently completed and maintained their Marine Species Observer Training certifications, allowing them to serve as designated observers during their own missions. Eglin NRO receives completed and signed certificates once trainings are completed. The aircrew also submit mission report forms after each mission is completed with results of pre- and post-mission surveys.

2.3 Description of AFSOC A-S Gunnery Training Activities

Ten A-S gunnery missions were conducted during the 2021 calendar year. Copies of all Protected Marine Species Observer Report Forms are included in Appendix A of this report. Table 2-4 summarizes the results of the report forms.

Table 2-4. Summary of Air-To-Surface Gunnery Missions for 2021

Date of Mission	Pre-Mission Surveys ^a		Mission Times		Post-Mission Surveys ^a		Rounds Used	# of Rounds Expended	Protected Marine Species Observed?
	Start	End	Start	End	Start	End			
1/5/2021	1420	1440	1440	1550	1550	1650	7.62 mm	2,200	No
1/8/2021	1110	1130	1135	1220	1220	1230	7.62 mm	500	No
1/21/2021 ^b	1530	1545	1530	1630	1630	1645	7.62 mm	5,400	No
2/3/2021	1415	1430	1430	1520	1520	1530	7.62 mm	3,200	No
2/8/2021	1350	1420	1420	1440	1440	1450	7.62 mm	5,400	No
2/17/2021	1030	1050	1050	1140	1140	1145	7.62 mm	5,400	No
4/5/2021	1145	1200	1200	1345	1345	1400	105 mm TR	30	No
							30 mm	300	
4/13/2021	1930	1940	1940	2120	2120	2130	105 mm TR	30	No
							30 mm	300	
10/14/2021 ^b	2100	2115	2100	2320	2300	2320	105 mm TR	30	No
							30 mm	300	
11/8/2021	1425	1436	1444	1517	c	c	105 mm FU	8	No ^c
							30 mm	18	

FU = Full-Up; HE = High Explosive; TR = Training Round; mm = millimeter

NOTE: Cells highlighted in blue are for missions conducted 30 minutes prior to sunset or later.

^a All pre-and post-mission surveys occurred 15 minutes prior to and after live fire was complete

^b MK-25 Marking Flare is the target type

^b The pre-mission and mission survey start times are the same because the observer counted the pre-mission survey as part of the overall mission time (see explanation in Section 2.4)

^c Observer unable to perform post-mission survey due to emergent flight conditions that forced early return to base (see explanation in Section 2.4)

2.4 AFSOC Mission Summary

Table 2-5 summarizes A-S gunnery expenditures during the 2021 calendar year and compares it with the annual allocations covered under the existing LOA and PBO. The number of A-S gunnery activities conducted in the EGTTTR for the reporting period were well below the total amounts authorized per year. Since no protected marine species were observed before, during, or following the missions, Eglin NRO concludes that no takes occurred.

Appendix A presents the Observation Report Forms completed by AFSOC. Eglin NRO notes that in two of the Protected Marine Species Observer Report Forms on January 21, 2021 and October 14, 2021, there are minor time discrepancies associated with the pre-mission survey and mission start time listed as the same time. Eglin NRO reached out to the observers and received a response back confirming that they included the pre- and post-mission survey times as part of the overall mission to reflect the entire time over the water range. Eglin NRO notes that in seven of the Protected Marine Species Observer Report Forms, there was missing information such as number of rounds, mission location, and mission description. Eglin NRO reached out to the observers and received responses back with the missing information. Copies of the emails with responses can be found in Appendix A of this report. In one report from a mission conducted on 8 Nov 2021, the observer reported that the mission was cut short due to an emergent need to return to base; he said they were unable to obtain exact coordinates for the mission location and that live fire was generally in the vicinity of the center of W151 A3 (see Appendix A). The pre- and post-mission surveys generally occurred 15 minutes prior to live fire and 15 minutes after live fire was complete.

Table 2-5. Comparison of Permitted vs. Actual Level of A-S Gunnery Mission Activities

	# Daytime Missions	# Nighttime Missions	25 mm HE	30 mm HE	40 mm HE	105 mm FU	105 mm TR	7.62 mm
Total Annual Allotments	25	45	39,200	35,000	4,480	750	1,350	N/A
Actual Usage	8	2	0	918	0	8	90	22,100
Unused Allotments	20	44	39,200	34,082	4,480	742	1,260	N/A

FU = Full-Up; HE = High Explosive; TR = Training Round; mm = millimeter; N/A = not applicable

3. 780th Test Squadron (780 TS)

The 780th Test Squadron (780 TS) conducts testing activities on a variety of weapons, including the AGM-158 (Joint Air-to-Surface Standoff Missile [JASSM]), GBU-39 (Small Diameter Bomb I [SDB-I]), AGM-114L (Longbow missile), GBU-53 (SDB-II), Joint Air-to-Ground Missile (JAGM), and others. Test missions for the 780 TS typically involve a one-time event using multiple weapon systems, with a small number of weather back-up days. Eglin NRO coordinates with the 780 TS prior to each test mission to develop a plan for pre-mission surveys and other monitoring requirements, depending on the weapons being dropped and other mission assets that

may be available. Two mission sets conducted by 780 TS in 2021 included Spike NLOS maritime testing and Navy JAGM testing.

3.1 Mission Set-Up

3.1.1 Spike NLOS Mission

Spike NLOS maritime testing for the 780 TS was scheduled in W-151A of the EGTTTR. The test site is approximately 17 NM (31 km) offshore from Santa Rosa Island (SRI). Figure 3-1 shows the location (as indicated by latitude and longitude) and basic set-up for this mission conducted in February 2021. Water depth of the mission site was approximately 135 ft (41 m). The proposed target area was located approximately 1,701 ft (518 m) north of the Gulf Range Armament Test Vessel (GRATV) instrumentation barge. The Surface Danger Zone (SDZ), surrounding the impact area, began 10.9 NM (20.2 km) from shore (Figure 3-2). Human safety procedures similar to those described in Section 1.1 were followed. Given the types of weapons released by the 780 TS and the size of the human safety box, 22 AF vessels were used to enforce the safety box.

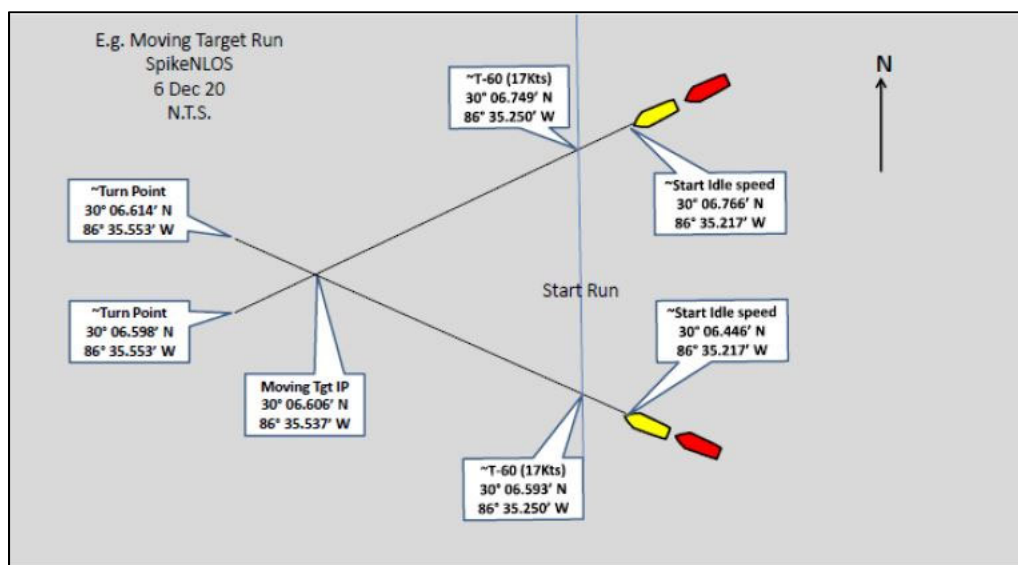


Figure 3-1. Spike NLOS Mission Set-Up

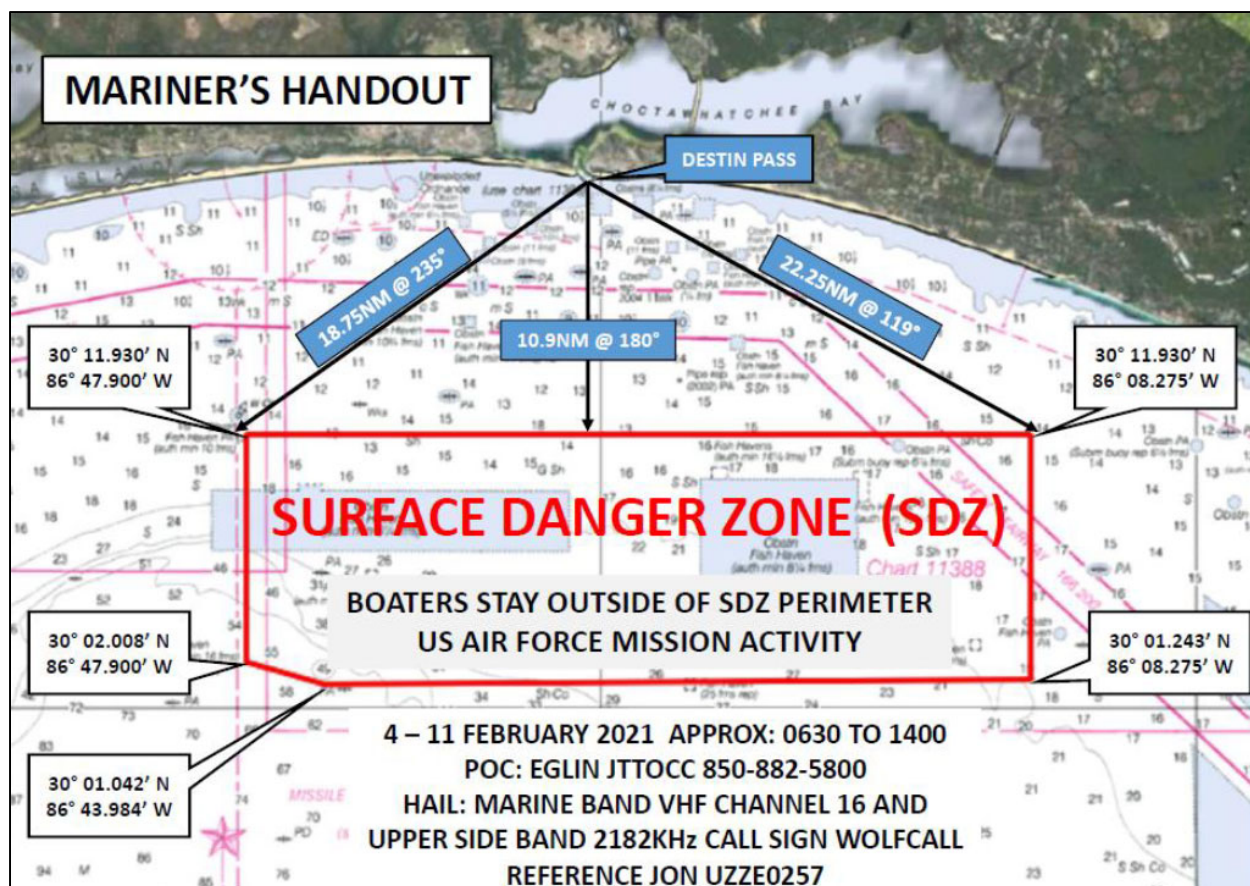


Figure 3-2. Human Safety Zone for Spike NLOS Mission

3.1.2 Navy JAGM Mission

The Navy JAGM mission for the 780 TS was scheduled in W-151A of the EGTTT. The test impact area was approximately 19.1 NM (35.4 km) offshore from SRI. Figure 3-3 shows the location (as indicated by latitude and longitude) and basic set-up for this test mission conducted in November 2021.

Water depth of the mission site was approximately 166 ft (50.6 m). The proposed target area was located approximately 1,640 ft (500 m) north of the GRATV. The northern point of the human safety zone (SDZ) began 11.4 NM (21.1 km) from shore, surrounding the impact area. Human safety procedures similar to those described in Section 1.1 were followed. Given the type of weapon released by the 780 TS and the size of the human safety box, 14 AF vessels were used to enforce the safety box (Figure 3-4).

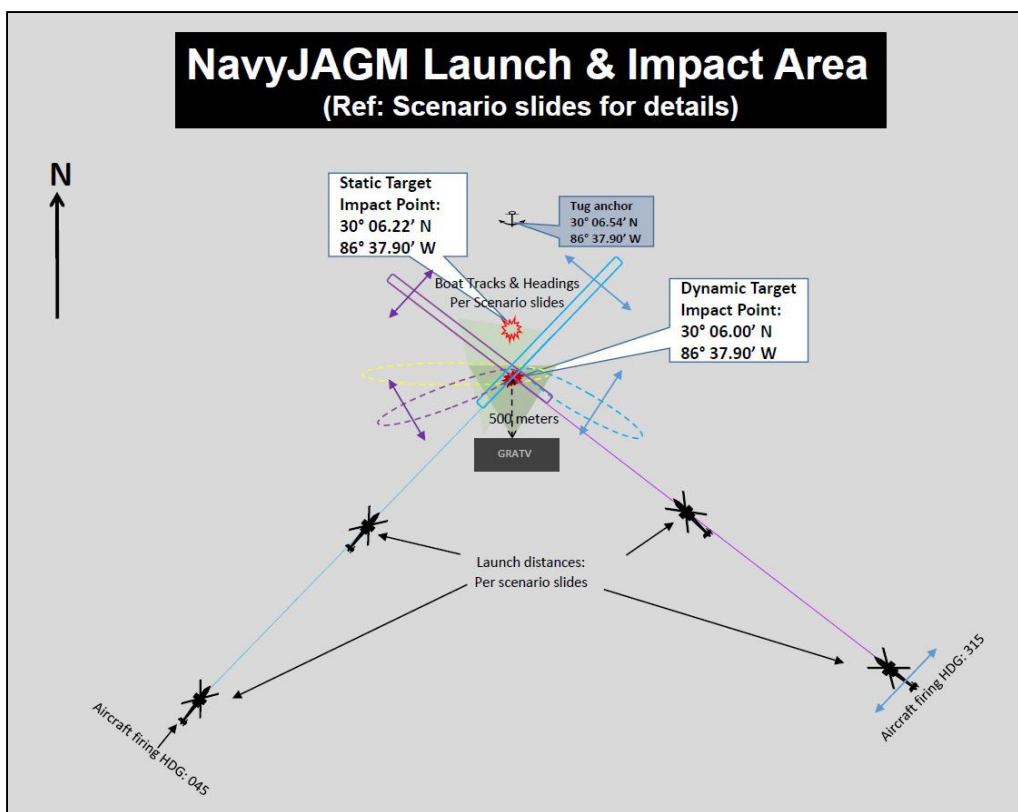


Figure 3-3. Navy JAGM Mission Set-Up

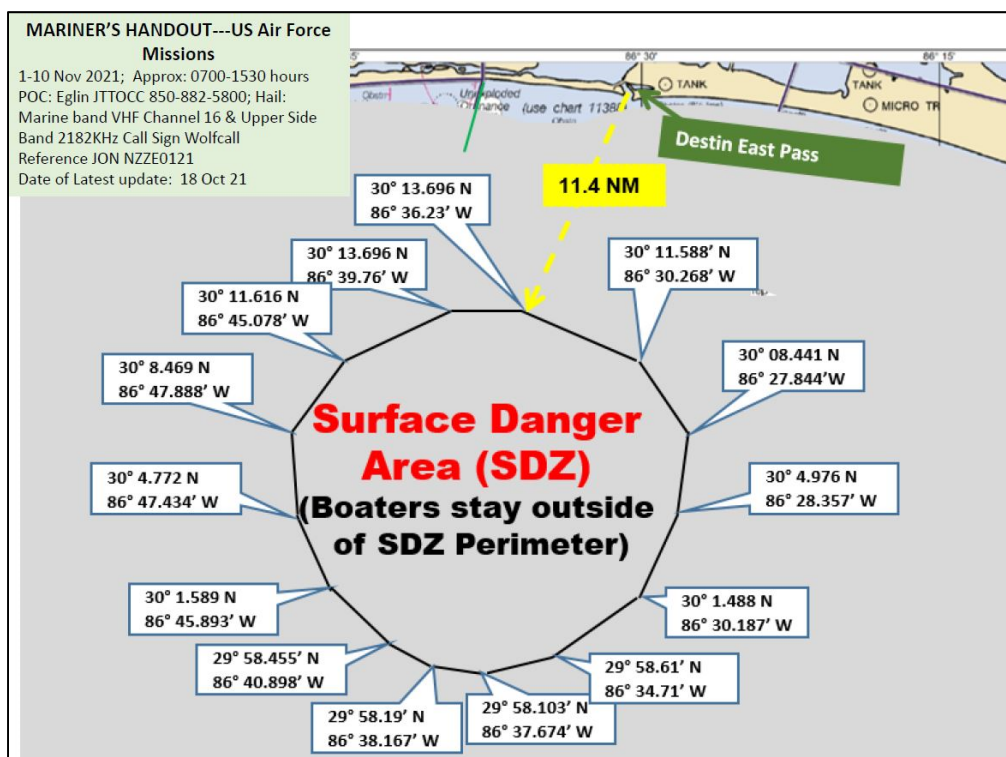


Figure 3-4. Human Safety Zone for Navy JAGM Mission

3.2 Mitigation and Monitoring Requirements

Table 3-1 lists the Mission Category Days found in the LOA for the weapons proposed to be released by the 780 TS. The Table also includes Mission Category Day “N” in the LOA used to account for the Spike NLOS missile (GBU-39 munition used in mission scenario) released by 780 TS in February.

Table 3-1. 780 TS Weapons Testing Mission Category Days

Mission Category Day	Munition	NEW (lbs)	Detonation Type	Munitions per Day	Mission Days/Year	Total Munitions/Year
M	AGM-158 (JASSM)	240	Surface	2	1	2
N	GBU-39 (SDB I)	37	Surface	2	1	2
	GBU-39 (SDB I) Double Shot ^a	74	Surface	2		2
O	GBU-53 (SDB II)	22.84	Surface	2	1	2
P	JAGM	27.41	Surface	1	1	1
Q	Inert LSDB & SDB II GTV (fuse only)	0.4	Surface	2	4	8

AGM = Air-To-Ground Missile; GBU = Guided Bomb Unit; GTV = Guided Test Vehicle; JAGM = Joint Air-to-Ground Missile; JASSM = Joint Air-To-Surface Standoff Missile; lbs = pounds; LSDB = Laser Small Diameter Bomb; SDB = Small Diameter Bomb

^aNEW is doubled for each simultaneous launch

^b Subsurface detonations occur at 10 feet water depth

Table 3-2 shows the ranges to effects for the various thresholds under each of the above 780 TS scenarios, also mentioned in the LOA. These distances were used to determine the radius of the area to be monitored during pre- and post-mission surveys.

Table 3-2. Distance in kilometers to NMFS Harassment Thresholds for Marine Mammals

Mission Category Day	Mortality	Level A Harassment				Level B Harassment		
	Modified Goertner Model 1	Slight Lung Injury	GI Tract Injury	PTS		TTS		Behavioral
		Modified Goertner Model 2	237 dB SPL	185 dB SEL	230 dB Peak SPL	170 dB SEL	224 dB Peak SPL	165 dB SEL
Bottlenose Dolphin								
M	0.12	0.249	0.22	0.211	0.447	0.761	0.825	1.123
N	0.076	0.168	0.149	0.202	0.302	0.671	0.557	0.982
O	0.047	0.107	0.101	0.136	0.204	0.432	0.376	0.64
P	0.051	0.115	0.107	0.116	0.217	0.271	0.4	0.527
Q	0.007	0.016	0.026	0.073	0.053	0.149	0.098	0.207
Atlantic Spotted Dolphin								
M	0.15	0.29	0.22	0.211	0.447	0.761	0.825	1.123

N	0.096	0.201	0.149	0.202	0.302	0.671	0.557	0.982
O	0.06	0.131	0.101	0.136	0.204	0.432	0.376	0.64
P	0.065	0.141	0.107	0.116	0.217	0.271	0.4	0.527
Q	0.009	0.02	0.026	0.073	0.053	0.149	0.098	0.207

¹ Positive impulse metric from the Goertner mortality model equation that uses the mass of a newborn calf of affected species

² Positive impulse metric from the Goertner injury model equation that uses the mass of a newborn calf of affected species

³ Peak pressure metric of 237 dB re 1 μ Pa (unweighted SPL)

⁴ These thresholds use dual criteria, one based on cumulative weighted SEL and one based on peak unweighted SPL. SEL metric was used because the distance was larger than SPL.

⁵ Weighted SEL metric of 185 dB re 1 μ Pa²·s

⁶ Weighted SEL metric of 170 dB re 1 μ Pa²·s

⁷ Weighted SEL metric of 165 dB re 1 μ Pa²·s

ASD = Atlantic spotted dolphin; BND = bottlenose dolphin; dB re 1 μ Pa = decibels referenced to 1 micropascal; dB re 1 μ Pa²·s = decibels referenced to 1 micropascal-squared second; GI = gastrointestinal; NMFS = National Marine Fisheries Service; PTS = permanent threshold shift; SEL = sound exposure level; SPL = sound pressure level; TTS = temporary threshold shift.

For any mission involving live munitions other than gunnery rounds, an area extending out to the Atlantic spotted dolphin Level A/PTS Harassment range for the corresponding mission-day scenario will be completely cleared of marine mammals prior to release of the first live ordnance. The rationale for using Level A/PTS threshold distances to effect for establishing the survey area is provided in the LOA request. As described in Section 2 of the LOA application, some missions will be delayed to allow survey platforms to evacuate the human safety zone after pre-mission surveys are completed. For delayed missions, an area extending out to the Level B TTS harassment zone for the corresponding mission-day scenario is surveyed. In all cases, this more than doubles the survey area from that of the Level A PTS zone, mitigating for the potential that an animal outside the area during pre-mission surveys would enter the Level A harassment or mortality zones during a mission. Observers conducting the protected marine species surveys monitor for species while in transit to the safety zone periphery and continue monitoring while stationed outside of the safety zone. Air Force support vessels also monitor for protected marine species, as feasible, throughout test preparation within the impact area. Additionally, a trained Eglin Natural Resources Office (NRO) observer is stationed at the CCF or secure facility monitoring live streaming video feed from the GRATV to identify any protected marine species that may enter the target area before live weapon releases. Employing this additional mitigation measure typically resolves any lapse between the time survey vessels or aircraft leave the safety zone after completing pre-mission surveys and before the mission actually begins.

The Spike NLOS missile system has a NEW of 34.0 lbs. but was not previously submitted in consultation, so the next largest munition, the GBU-39 (NEW of 39 lbs.; Mission Category Day “N”) was used to determine the radius of the area to be surveyed for protected marine species. This Mission Category Day accounts for up to two single GBU-39 shots and/or two double GBU-39 shots (total NEW of double shot is 74 lbs.), and only one mission day per year for each. To simplify planning and implementation of requirements, the Atlantic spotted dolphin Level A Harassment threshold (0.202 km) was selected. Eglin NRO biologists doubled the Level A/PTS (0.202 x 2) = 0.404 km radius (0.22 NM, rounded to 0.23 NM) to account for animals that could swim into the ZOI after surveys were completed, and covers effects to sea turtles through impairment and disturbance. Given the relatively small size of survey area, only one boat was used for the surveys, *Sturgeon*.

For the Navy JAGM mission, Mission Category Day “P” was used to determine the radius of the area to be surveyed for protected marine species. This Mission Category Day accounts for up to one JAGM munition per day with a NEW of 27.41 lbs, and only one mission day per year. To simplify planning and implementation of requirements, the Atlantic spotted dolphin Level A Harassment threshold (0.079 km) was selected. Eglin NRO biologists doubled the Level A/PTS (0.079×2) = 0.158 km radius (0.09 NM) to account for animals that could swim into the ZOI after surveys were completed, and covers effects to sea turtles through impairment and disturbance. Given the small size of the survey area, only one boat was used for the surveys, *Ground Control*.

3.3 Description of 780 TS Missions

3.3.1 Spike NLOS Mission

This 780 TS test mission involved deploying a Spike NLOS multi-purpose electro-optical/infrared missile system against both static and moving boat targets. One live weapon was released on the first scheduled mission day. Four additional mission days and two additional live shots were planned, however due to both weather and technical difficulties, no more live shots were released.

3.3.1.1 Thursday 04 February 2021

3.3.1.1.1 Pre-Mission Survey Results

Survey boat *Sturgeon* arrived at the survey area at 7:00 AM. Weather and sea-state conditions were excellent with 4 knot winds out of the northeast, sunny skies, and 1 ft seas. Visibility was excellent. Pre-mission survey began at 7:05 AM and was completed at 7:35 AM. Figure 3-5 shows the trackline of *Sturgeon* for the survey. The area was covered thoroughly with a marine observer at the top of the boat tower. There were no protected marine species observed during the pre-mission survey.

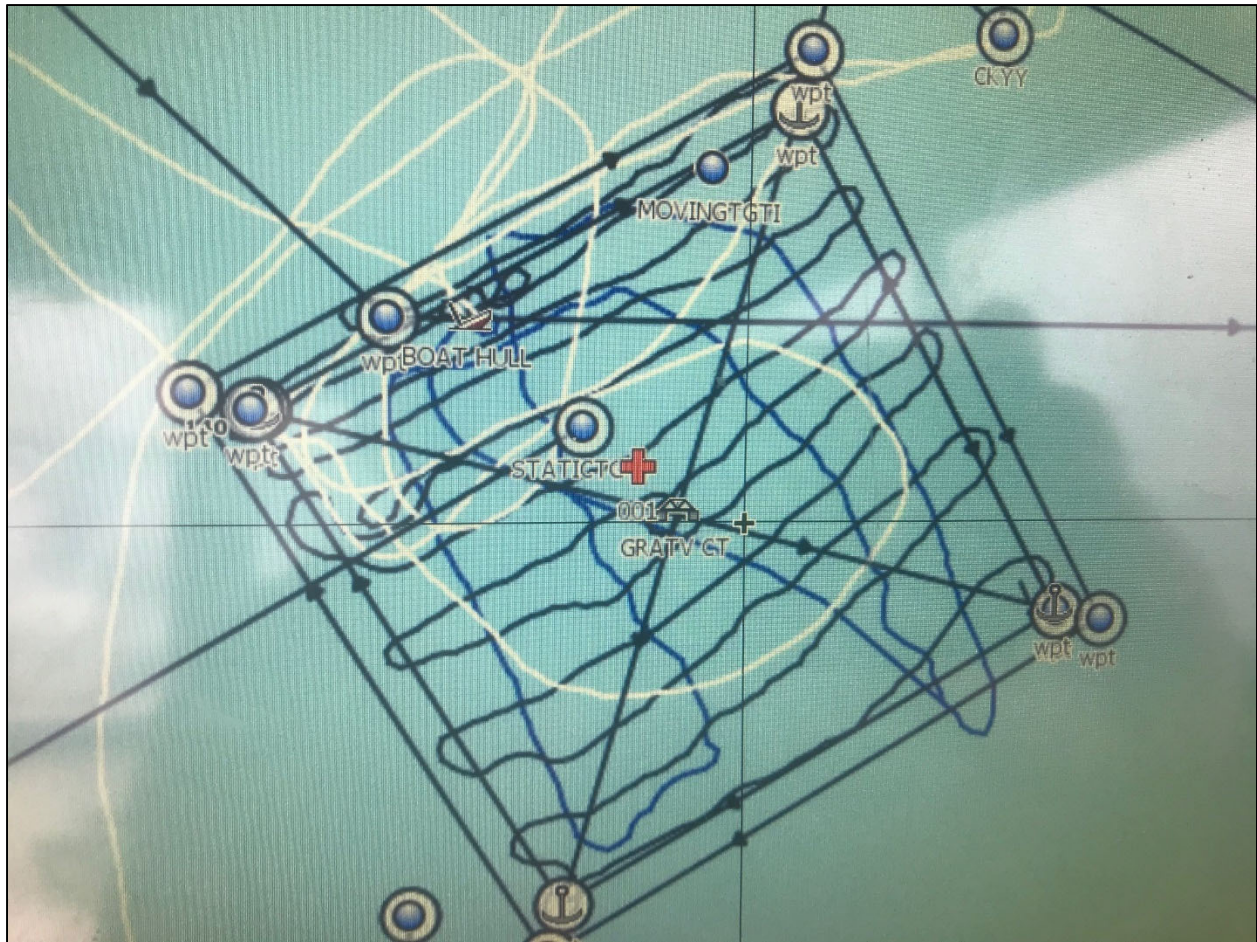


Figure 3-5. Sturgeon Survey Route for Spike NLOS Mission

3.3.1.1.2 Mission Results

The Eglin NRO representative arrived at A-5 at 7:20 AM and began monitoring the GRATV live camera video feed for protected marine species at 7:25 AM. One live Spike NLOS missile was released on this mission day. The weapon was released at 9:15 AM and detonated at 9:21 AM, successfully impacting a static boat target. No protected marine species were observed. Marine conditions became unfavorable shortly after weapon release, and the remainder of the mission day was cancelled. No other weapons were released on this day. The mission ended at 10:00 AM.

3.3.1.1.3 Post-Mission Survey Results

The post-mission survey began at 11:00 AM and ended at 11:30 AM. Visibility was good. No protected marine species were observed.

3.3.1.1.4 Take Analysis

No protected marine species were observed during the pre-mission survey, mission, or post-mission survey. Therefore, Eglin NRO concludes that no takes occurred during this mission day.

3.3.1.2 Monday 08 February 2021

The mission setup for this day's mission was identical to the mission day on February 4, 2021.

3.3.1.2.1 Pre-Mission Survey Results

Sturgeon arrived at the survey area at 6:45 AM. Weather and sea-state conditions were fair with 2-4 ft seas and marginal visibility. Pre-mission survey began at 6:50 AM and was completed at 7:30 AM. There were no protected marine species observed during the pre-mission survey.

3.3.1.2.2 Mission Results

The Eglin NRO representative arrived at A-5 at 7:30 AM and began monitoring the GRATV live camera video feed for protected marine species at 7:35 AM. No live weapons were released on this mission day. No protected marine species were observed. The mission was cancelled due to increased cloud cover and a low ceiling, not conducive to flying. Mission was cancelled at 11:20 AM.

3.3.1.2.3 Post-Mission Survey Results

Since no weapons were released, a post-mission survey was not required.

3.3.1.2.4 Take Analysis

No takes occurred during this mission day because no weapons were released.

3.3.1.3 Tuesday 09 February 2021

The mission setup for this day's mission was identical to the previous day.

3.3.1.3.1 Pre-Mission Survey Results

Sturgeon arrived at the survey area at 9:10 AM. Weather and sea-state conditions were fair with 2-3 ft seas and marginal visibility. Pre-mission survey began at 9:20 AM and was completed at 9:50 AM. There were no protected marine species observed during the pre-mission survey.

3.3.1.3.2 Mission Results

The Eglin NRO representative arrived at A-5 at 7:15 AM and began monitoring the GRATV live camera video feed for protected marine species at 7:20 AM. No live weapons were released on this mission day. No protected marine species were observed. The mission was cancelled due to increased cloud cover and a low ceiling, as well as technical issues. Mission was cancelled at 11:35 AM.

3.3.1.3.3 Post-Mission Survey Results

Since no weapons were released, a post-mission survey was not required.

3.3.1.3.4 Take Analysis

No takes occurred during this mission day because no weapons were released.

3.3.1.4 Wednesday 10 February 2021

The mission setup for this day's mission was identical to the previous day.

3.3.1.4.1 Pre-Mission Survey Results

Sturgeon arrived at the survey area at 6:20 AM. Weather and sea-state conditions were good with dense fog early on that cleared. Seas were 1-2 ft with excellent visibility. Pre-mission survey began at 9:00 AM and was completed at 9:30 AM. There were no protected marine species observed during the pre-mission survey.

3.3.1.4.2 Mission Results

The Eglin NRO representative arrived at A-5 at 7:20 AM and began monitoring the GRATV live camera video feed for protected marine species at 7:25 AM. No live weapons were released on this mission day. No protected marine species were observed. The mission was cancelled due to increased cloud cover and a low ceiling, as well as technical issues. Mission was cancelled at 12:30 PM.

3.3.1.4.3 Post-Mission Survey Results

Since no weapons were released, a post-mission survey was not required.

3.3.1.4.4 Take Analysis

No takes occurred during this mission day because no weapons were released.

3.3.1.5 Thursday 11 February 2021

The mission setup for this day's mission was identical to the previous day.

3.3.1.5.1 Pre-Mission Survey Results

Sturgeon was delayed due to inshore fog, but arrived at the survey area at 9:00 AM. Weather and sea-state conditions were excellent with 1-2 ft seas and excellent visibility. Pre-mission survey began at 9:30 AM and was completed at 10:00 AM. There were no protected marine species observed during the pre-mission survey.

3.3.1.5.2 Mission Results

The Eglin NRO representative arrived at A-5 at 9:50 AM and began monitoring the GRATV live camera video feed for protected marine species at 9:55 AM. The Spike NLOS mission engineer advised the Eglin NRO representative to arrive later during the morning due to inshore fog. No live weapons were released on this mission day. No protected marine species were observed. The mission was cancelled due to increased cloud cover and a low ceiling. Mission was cancelled at 11:15 AM.

3.3.1.5.3 Post-Mission Survey Results

Since no weapons were released, a post-mission survey was not required.

3.3.1.5.4 Take Analysis

No takes occurred during this mission day because no weapons were released.

3.3.2 Navy JAGM Mission

This 780 TS test mission involved deploying a live JAGM at a moving boat target. One live weapon was released on the fourth scheduled mission day. No other live weapons were proposed for release during this mission.

3.3.2.1 Thursday 04 November 2021

3.3.2.1.1 Pre-Mission Survey Results

Survey boat *Ground Control* arrived at the survey location at 7:55 AM. Weather and sea-state conditions were good with cloudy skies and 1-2 ft seas. Pre-mission survey began at 7:55 AM and was completed at 8:37 AM. There were no protected marine species observed during the pre-mission survey.

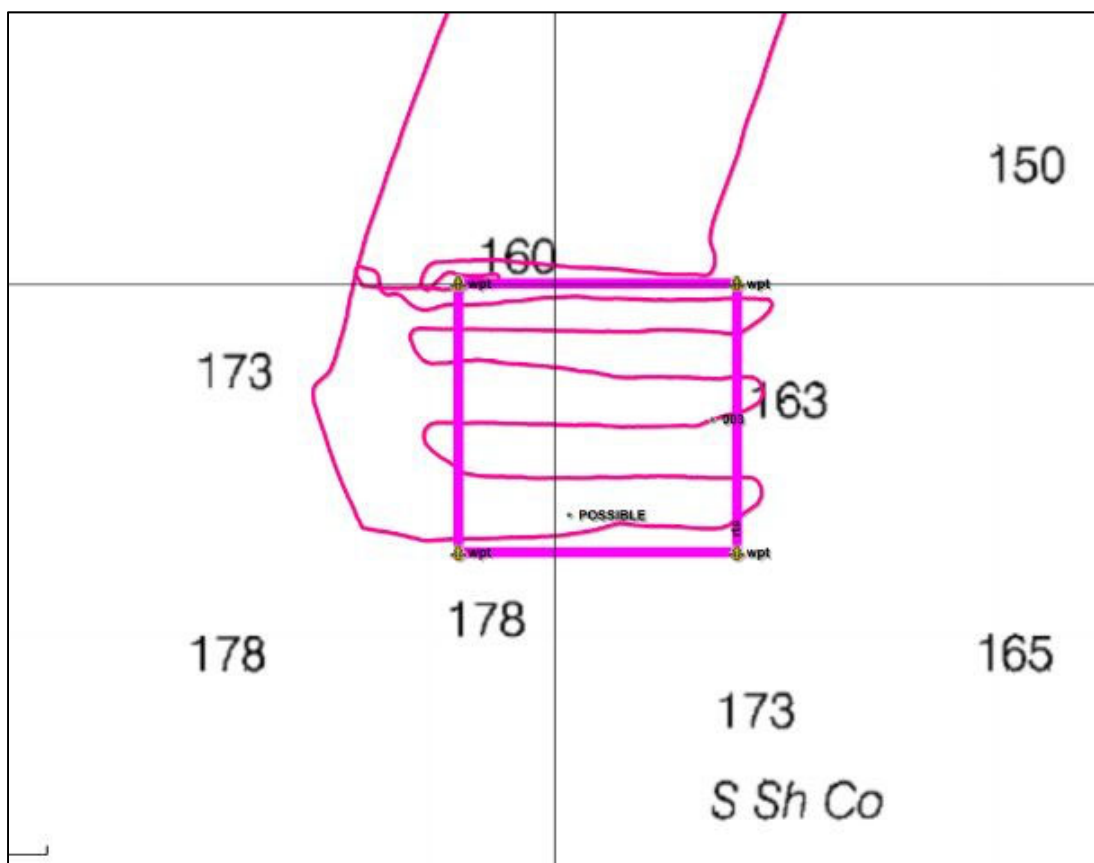


Figure 3-6. *Ground Control* Survey Route for Navy JAGM Mission

3.3.2.1.2 Mission Results

The Eglin NRO representative arrived at A-5 at 8:15 AM and began monitoring the GRATV live camera video feed for protected marine species at 8:18 AM. No live weapons were released on this mission day. No protected marine species were observed. The mission was cancelled due to technical issues. Mission was cancelled at 12:10 PM.

3.3.2.1.3 Post-Mission Survey Results

Since no weapons were released, a post-mission survey was not required.

3.3.2.1.4 Take Analysis

No takes occurred during this mission day because no weapons were released.

3.3.2.2 Friday 05 November 2021

The mission setup for this day's mission was identical to the previous day.

3.3.2.2.1 Pre-Mission Survey Results

A pre-mission survey was not conducted since the mission was cancelled due to inclement weather and unfavorable sea state conditions.

3.3.2.2.2 Mission Results

The Eglin NRO representative did not go to A-5 on this scheduled mission day. The mission was cancelled early in the morning due to inclement weather and unfavorable sea state conditions.

3.3.2.2.3 Post-Mission Survey Results

A post-mission survey was not required since the mission was cancelled.

3.3.2.2.4 Take Analysis

No takes occurred since the mission was cancelled and no weapons were released.

3.3.2.3 Saturday 06 November 2021

The mission setup for this day's mission was identical to the previous day.

3.3.2.3.1 Pre-Mission Survey Results

A pre-mission survey was not conducted since the mission was cancelled due to inclement weather and unfavorable sea state conditions.

3.3.2.3.2 Mission Results

The Eglin NRO representative did not go to A-5 on this scheduled mission day. The mission was cancelled early in the morning due to inclement weather and unfavorable sea state conditions.

3.3.2.3.3 Post-Mission Survey Results

A post-mission survey was not required since the mission was cancelled.

3.3.2.3.4 Take Analysis

No takes occurred since the mission was cancelled and no weapons were released.

3.3.2.4 Sunday 07 November 2021

The mission setup for this day's mission was identical to the previous day.

3.3.2.4.1 Pre-Mission Survey Results

Survey boat *Ground Control* arrived at the survey location at 7:15 AM. Weather and sea-state conditions were good with sunny skies, 2-3 ft seas (20% whitecaps), and marginal visibility. Pre-mission survey began at 7:30 AM and was completed at 8:15 AM. There were no protected marine species observed during the pre-mission survey.

3.3.2.4.2 Mission Results

The Eglin NRO representative arrived at A-5 at 8:30 AM and began monitoring the GRATV live camera video feed for protected marine species at 8:35 AM. One live JAGM was released on this mission day. The missile was released at 10:12 AM and detonated at 10:13 AM, successfully hitting a moving boat target. No protected marine species were observed. No other weapons were released on this day. The mission was complete at 10:20 AM.

3.3.2.4.3 Post-Mission Survey Results

The post-mission survey began at 10:29 AM and ended at 11:00 AM. Visibility was good. No protected marine species were observed.

3.3.2.4.4 Take Analysis

No protected marine species were observed during the pre-mission survey, mission, or post-mission survey. Therefore, Eglin NRO concludes that no takes occurred during this mission day.

3.4 780 TS Mission Summary

Table 3-3 summarizes 780 TS expenditures during the 2021 calendar year and compares it with the annual allocations covered under the existing LOA and BO.

Table 3-3. Comparison of Permitted vs. Actual Level of 780 TS Mission Activities

Weapons ^a	Mission Category Day	Total Munitions per Year	Actual Munitions Released in 2021	Unused Munitions in 2021
GBU-39 ^b	N	2	1	1
JAGM	P	1	1	0

^a This table is representative of live detonations only; inert detonations are not included

^b A GBU-39 (NEW: 37 lbs) was used in place of the Spike NLOS missile (NEW: 34 lbs) since it was the next largest munition in the 780 TS Mission Day Category

780 TS missions and weapon releases did not exceed the total of expenditures authorized in the LOA. Furthermore, no protected marine species were observed during post-mission surveys after each of the tests. Therefore, Eglin NRO believes no takes of marine mammals or sea turtles occurred as a result from 780 TS mission activities in 2021.

4. 96 Operations Group (96 OG)

The 96 Operations Group (96 OG) conducts the 96 Test Wing's primary missions of developmental testing and evaluation of conventional munitions and command and control systems. As the organization that oversees all users of Eglin ranges, they have the authority to approve new missions that can be conducted in the EGTTT, such as the United States Special Operations Command (USSOCOM) Rapid Dragon JASSM mission that was conducted in 2021. The 96 OG anticipates air-to-surface missions for several user groups on an infrequent basis, supporting the need for future unknown activities. Eglin NRO coordinates with the participating user group prior to each test mission to develop a plan for pre-mission surveys and other monitoring requirements, depending on the weapons being dropped and other mission assets that may be available. One USSOCOM Rapid Dragon JASSM mission was conducted under the 96 OG during the calendar year of 2021.

4.1 Mission Set-Up

4.1.1 Rapid Dragon Mission

The Rapid Dragon mission for USSOCOM was scheduled in W-151A of the EGTTT. The test site is approximately 17 NM (31 km) offshore from Santa Rosa Island (SRI). Figure 4-1 and Figure 4-2 show the location and basic set-up for this mission conducted in December 2021. Water depth of the mission site was approximately 142 ft (43 m). The proposed impact area was located approximately 1 NM (1,852 m) east of the Gulf Range Armament Test Vessel (GRATV) instrumentation barge. The human safety zone extended 7.2 NM (13 km) from impact site (Figure 4-3). Human safety procedures similar to those described in Section 1.1 were followed. Given the type of weapon released by the USSOCOM and the size of the human safety box, 16 AF vessels were used to enforce the safety box.

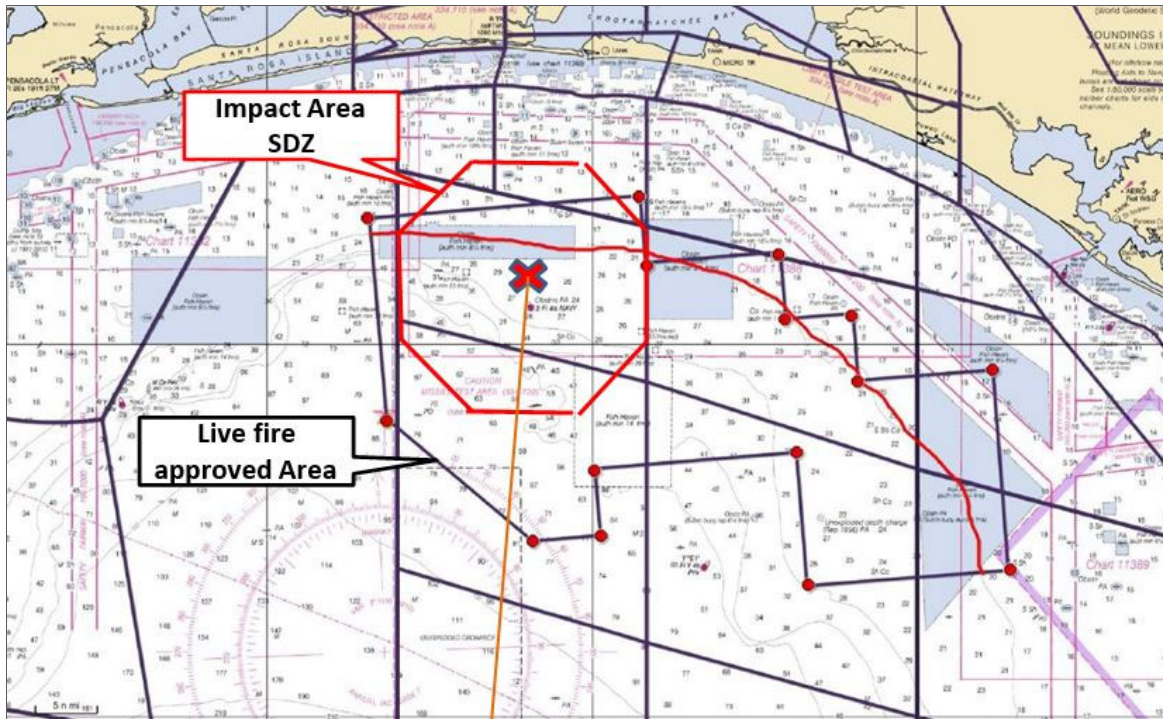


Figure 4-1. Rapid Dragon Mission Area

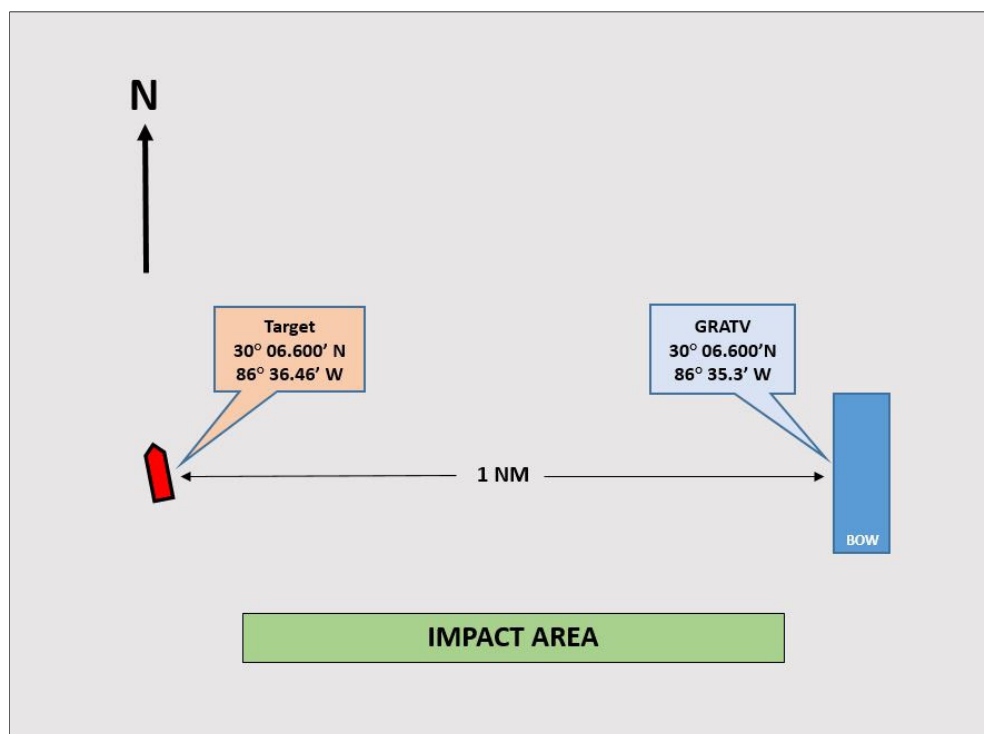


Figure 4-2. Rapid Dragon Mission Set-Up

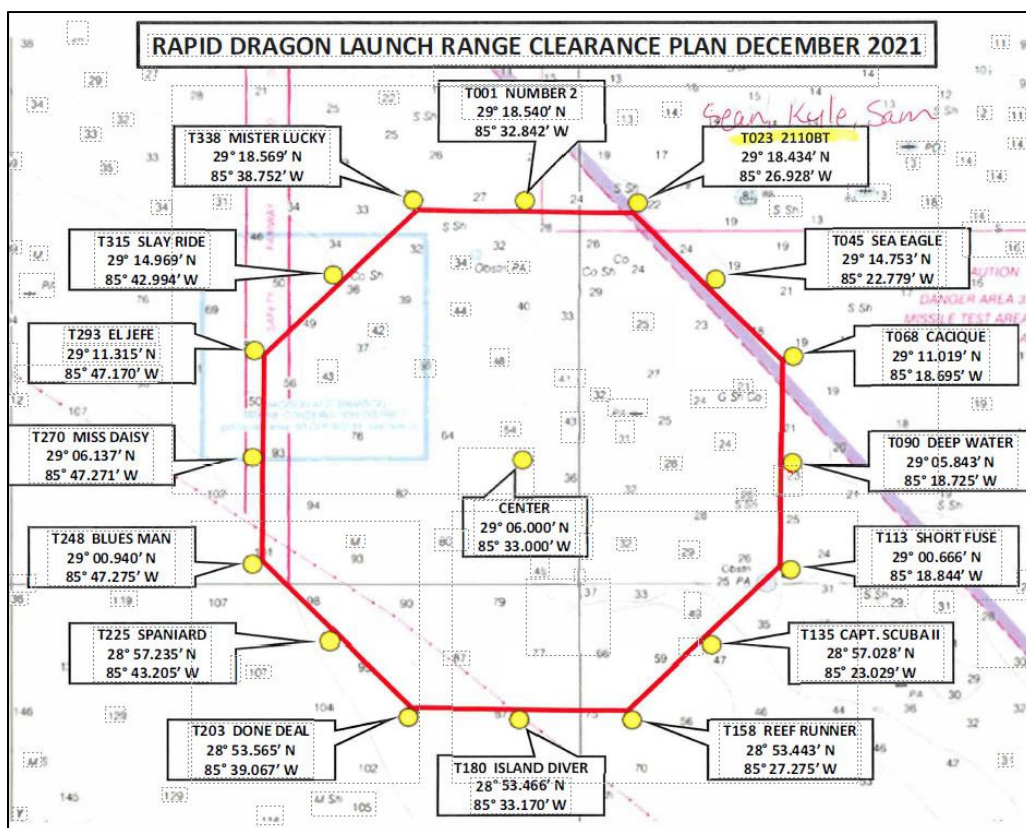


Figure 4-3. Human Safety Zone for Rapid Dragon Mission

4.2 Mitigation and Monitoring Requirements

Table 4-1 lists the Mission Category Days for the weapons proposed to be released under the 96 OG Future Missions category in the EGTTT LOA. The table includes Mission Category Day “R” in the LOA used to account for the JASSM released by USSOCOM in December 2021.

Table 4-1. 96 OG Future Testing Mission Category Days

Mission Category Day	Munition	NEW (lbs)	Detonation Type	Munitions per Day	Mission Days/Year	Total Munitions/Year
R	GBU-10/-24	945	Subsurface ^a	1	1	1
	AGM-158 (JASSM)	240	Surface	1		1
	GBU-12 or GBU-54	192	Subsurface ^a	1		1
S	AGM-65 (Maverick)	86	Surface	1	2	2
	GBU-39 (SDB I or LSDB)	37	Subsurface ^a	2		4
	AGM-114 (Hellfire)	29	Subsurface ^a	10		20
T	105 mm HEI (FU)	4.7	Surface	13	10	130
	40 mm HEI	0.9	Surface	60		600
	Live fuse	0.4	Surface	20		200
	30 mm HEI	0.1	Surface	500		5,000

AGM = Air-To-Ground Missile; FU = Full-Up; GBU = Guided Bomb Unit; HEI = High Explosive Incendiary; JASSM = Joint Air-To-Surface Standoff Missile; lbs = pounds; LSDB = Laser Small Diameter Bomb; mm = millimeter; SDB = Small Diameter Bomb

^a Subsurface detonations occur at 10 feet water depth

Table 4-2 shows the ranges to effects for the various thresholds under each of the above 96 OG scenarios, also mentioned in the LOA. These distances were used to determine the radius of the area to be monitored during pre- and post-mission surveys.

Table 4-2. Distance in kilometers to NMFS Harassment Thresholds for Marine Mammals

Mission Category Day	Mortality	Level A Harassment				Level B Harassment		
	Modified Goertner Model 1	Slight Lung Injury	GI Tract Injury	PTS		TTS		Behavioral
		Modified Goertner Model 2	237 dB SPL	185 dB SEL	230 dB Peak SPL	170 dB SEL	224 dB Peak SPL	165 dB SEL
Bottlenose Dolphin								
R	0.427	0.768	0.348	0.811	0.705	4.316	1.302	6.883
S	0.142	0.286	0.156	0.692	0.317	3.941	0.585	5.132
T	0.024	0.055	0.059	0.224	0.12	0.837	0.222	1.209
Atlantic Spotted Dolphin								
R	0.504	0.886	0.348	0.811	0.705	4.316	1.302	6.883
S	0.172	0.336	0.156	0.692	0.317	3.941	0.585	5.132
T	0.03	0.067	0.059	0.224	0.12	0.837	0.222	1.209

¹ Positive impulse metric from the Goertner mortality model equation that uses the mass of a newborn calf of affected species

² Positive impulse metric from the Goertner injury model equation that uses the mass of a newborn calf of affected species

³ Peak pressure metric of 237 dB re 1 μ Pa (unweighted SPL)

⁴ These thresholds use dual criteria, one based on cumulative weighted SEL and one based on peak unweighted SPL. SEL metric was used because the distance was larger than SPL.

⁵ Weighted SEL metric of 185 dB re 1 μ Pa²·s

⁶ Weighted SEL metric of 170 dB re 1 μ Pa²·s

⁷ Weighted SEL metric of 165 dB re 1 μ Pa²·s

ASD = Atlantic spotted dolphin; BND = bottlenose dolphin; dB re 1 μ Pa = decibels referenced to 1 micropascal; dB re 1 μ Pa²·s = decibels referenced to 1 micropascal-squared second; GI = gastrointestinal; NMFS = National Marine Fisheries Service; PTS = permanent threshold shift; SEL = sound exposure level; SPL = sound pressure level; TTS = temporary threshold shift.

For any mission involving live munitions other than gunnery rounds, an area extending out to the Atlantic spotted dolphin Level A/PTS Harassment range for the corresponding mission-day scenario will be completely cleared of marine mammals prior to release of the first live ordnance. The rationale for using Level A/PTS threshold distances to effect for establishing the survey area is provided in the LOA request.

For the USSOCOM Rapid Dragon mission, Mission Category Day “R” was used to determine the radius of the area to be surveyed for protected marine species. This Mission Category Day accounts for up to one JASSM munition per day with a NEW of 240 lbs, and only one mission day per year. To simplify planning and implementation of requirements, the Atlantic spotted dolphin Level A/PTS was doubled ($0.811 \times 2 = 1.622$ km radius [0.86 NM]) to account for animals that could swim into the ZOI after surveys were completed, and covers effects to sea turtles through

impairment and disturbance. Given the size of the survey area, two boats were used for surveys, *Ground Control* and *Sturgeon*.

4.3 Description of 96 OG Mission

4.3.1 Rapid Dragon Mission

This USSOCOM test mission involved deploying a JASSM munition against a static boat target. Only one live weapon was released during this mission; no other live weapons were proposed.

4.3.1.1 Tuesday 14 December 2021

4.3.1.1.1 Pre-Mission Survey Results

Survey boats *Ground Control* and *Sturgeon* arrived at the survey location at 6:10 AM. Weather and sea-state conditions were good with sunny skies, 1-2 ft seas, and excellent visibility at ~500 m. Pre-mission survey began at 6:15 AM and was completed at 7:05 AM. Refer to Figure 4-4 for the trackline of the survey area. There were no protected marine species observed during the pre-mission survey.

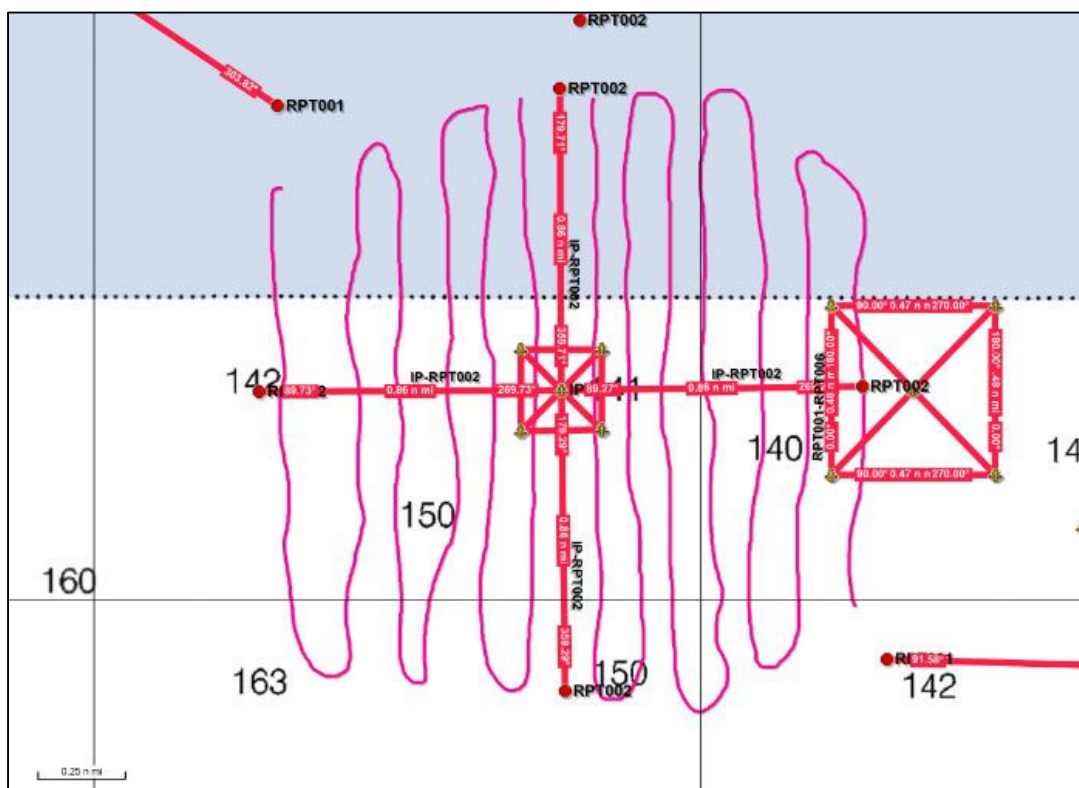


Figure 4-4. Survey Route for Rapid Dragon Mission

4.3.1.1.2 Mission Results

The Eglin NRO representative arrived at CCF at 6:45 AM and began monitoring the live camera video feed for protected marine species at 07:00 AM. The Rapid Dragon mission engineers decided to cancel the mission for the day due to critical hardware failure of the weapon. No protected

marine species were observed. No live weapons were released on this mission day. Mission was cancelled at 9:00 AM.

4.3.1.1.3 Post-Mission Survey Results

Since no weapons were released, a post-mission survey was not required.

4.3.1.1.4 Take Analysis

No takes occurred during this mission day because no weapons were released.

4.3.1.2 Wednesday 15 December 2021

The mission setup for this day's mission was identical to the previous day.

4.3.1.2.1 Pre-Mission Survey Results

Survey boats *Ground Control* and *Sturgeon* arrived at the survey location at 6:05 AM. Weather and sea-state conditions were fair with partially cloudy skies, 2-3 ft seas (10% whitecaps), and marginal visibility. Pre-mission survey began at 6:13 AM and was completed at 7:08 AM. *Ground Control* reported a sighting of two dolphins during the survey, listed in Table 4-3.

Table 4-3. Pre-Mission Survey Results from Rapid Dragon Mission

#	Time	Vessel	Sighting	Location	Resolution
1	6:35 AM	<i>Ground Control</i>	(2) Dolphins (1 Bottlenose, 1 Atlantic spotted)	30° 06.542 N -86° 36.691 W	Dolphins were observed heading due west at ~8 knots away from ZOI. Biologists followed behind and observed dolphins exit the western boundary of the ZOI still heading due west @ 30° 06.569, -86° 37.184.

4.3.1.2.2 Mission Results

The Eglin NRO representative arrived at CCF at 6:58 AM and began monitoring the live camera video feed for protected marine species at 07:02 AM. The cameras on the GRATV were bobbing up and down due to the sea state, but the Eglin NRO representative was still able to monitor the visible area with no issues. The Rapid Dragon mission engineers decided to cancel the mission for the day because the aircraft that clears the safety profile was unable to perform its duties. No protected marine species were observed. No live weapons were released on this mission day. The mission was cancelled at 9:15 AM.

4.3.1.2.3 Post-Mission Survey Results

Since no weapons were released, a post-mission survey was not required.

4.3.1.2.4 Take Analysis

No takes occurred during this mission day because no weapons were released.

4.3.1.3 Thursday 16 December 2021

The mission setup for this day's mission was identical to the previous day.

4.3.1.3.1 Pre-Mission Survey Results

Survey boats *Ground Control* and *Sturgeon* arrived at the survey location at 6:10 AM. Weather and sea-state conditions were good with mostly sunny skies, 2 ft seas, and visibility at ~400 m. Pre-mission survey began at 6:13 AM and was completed at 7:20 AM. *Sturgeon* vessel became inoperable and unable to perform survey, so *Ground Control* conducted the entire survey. An observer was able to view the survey area from the boat tower. There were no protected marine species observed during the pre-mission survey.

4.3.1.3.2 Mission Results

The Eglin NRO representative arrived at CCF at 7:30 AM and began monitoring the live camera video feed for protected marine species at 07:35 AM. One live JASSM was released on this mission day. The weapon was released at 9:15 AM and detonated at 9:21 AM, successfully impacting a static boat target. No protected marine species were observed. No other weapons were released on this day. The mission was complete at 10:00 AM.

4.3.1.3.3 Post-Mission Survey Results

The post-mission survey began at 9:55 AM and ended at 10:55 AM. *Ground Control* surveyed in and around the debris field and survey route. No protected marine species were observed.

4.3.1.3.4 Take Analysis

No protected marine species were observed during the pre-mission survey, mission, or post-mission survey. Therefore, Eglin NRO concludes that no takes occurred during this mission day.

4.4 96 OG Mission Summary

Table 4-4 summarizes 96 OG Future Missions expenditures during the 2021 calendar year and compares it with the annual allocations covered under the existing LOA and BO.

Table 4-4. Comparison of Permitted vs. Actual Level of 96 OG Future Mission Activities

Weapons ^a	Mission Category Day	Total Munitions per Year	Actual Munitions Released in 2021	Unused Munitions in 2021
AGM-158 (JASSM)	R	1	1	0

AGM = Air-to-Ground Missile; JASSM = Joint Air-to-Surface Missile

^a This table is representative of live detonations only; inert detonations are not included

The 96 OG mission and weapon release did not exceed the total of expenditures authorized in the LOA. Furthermore, no protected marine species were observed during the post-mission survey after the weapon release. Therefore, Eglin NRO believes no takes of marine mammals or sea turtles occurred as a result from 96 OG mission activities in 2021.

5. 86th Fighter Weapons Squadron (86 FWS) – Maritime Weapons Systems Evaluation Program (WSEP)

The 86 FWS did not conduct any live missions over the EGTTT in the calendar year 2021.

6. 413th Flight Test Squadron (413 FLTS)

The 413 FLTS did not conduct any live missions over the EGTTT in calendar year 2021.

7. Summary of all EGTTT Mission Activities

Table 7-1 below summarizes results from protected marine species surveys and live weapon releases in the EGTTT during calendar year 2021.

Table 7-1. Summary of Survey Results and Live Weapon Releases in the EGTTT

Mission Group	Mission Date	Pre-Mission Survey Results		During Mission Survey Results		Live Weapons Releases			Post-Mission Survey Results	
		# MM	# ST	# MM	# ST	Type	NEW	#	# MM	# ST
AFSOC	1/5/2021	0	0	0	0	Gunnery	N/A	2200	0	0
	1/8/2021	0	0	0	0	Gunnery	N/A	500	0	0
	1/21/2021	0	0	0	0	Gunnery	N/A	5400	0	0
	2/3/2021					Gunnery	N/A	3200	0	0
	2/8/2021	0	0	0	0	Gunnery	N/A	5400	0	0
	2/17/2021	0	0	0	0	Gunnery	N/	5400	0	0
	4/5/2021	0	0	0	0	Gunnery	0.35 lbs	30	0	0
							0.1 lbs	300		
	4/13/2021	0	0	0	0	Gunnery	0.35 lbs	30	0	0
							0.1 lbs	300		
	10/14/2021	0	0	0	0	Gunnery	0.35 lbs	30	0	0
							0.1 lbs	300		
	11/8/2021 ^a	0	0	0	0	Gunnery	4.7 lbs	8	a	a
							0.1 lbs	18		
780 TS	2/04/2021	0	0	0	0	Missile	39 lbs	1	0	0
	11/07/2021	0	0	0	0	Missile	27.41 lbs	1	0	0
96 OG	12/15/2021	2	0	N/A	N/A	No live weapons were released			N/A	N/A
	12/16/2021	0	0	0	0	Missile	240.0 lbs	1	0	0
Total # species observed		2	0	0	0				0	0

^a Observer was unable to perform post-mission survey; # = number; AFSOC = Air Force Special Operations Command; lbs = pounds; MM = marine mammals; N/A = not applicable; NEW = net explosive weight; OG = Operations Group; ST = sea turtles; TS = Test Squadron

8. Effectiveness of Mitigation and Monitoring Requirements

The mitigation and monitoring methods authorized by NMFS were successfully implemented in support of EGTTR mission activities. In cases where protected marine species were observed, Eglin NRO believes all reasonable measures were taken to ensure sighted animals would not be exposed to acoustic levels resulting in mortality or physical injury thresholds during live weapon releases. Continuing to use the same marine species observers for vessel-based surveys has likely increased the reliability of sightings data as boat captains and observers are expected to have improved their surveying techniques over the years.

Video monitoring in CCF and in building A-5 was accomplished for three live mission days. Eglin NRO plans to incorporate video monitoring for all future EGTTR live missions when operationally feasible. Eglin NRO has distributed updated protected marine species observer trainings, mission report forms, and copies of current permits to AFSOC, the 413 FLTS, and the 417 FLTS for future mission activities. Implementing these improvements in the monitoring requirements will further increase Eglin's effectiveness in protecting marine mammals and sea turtles during live weapon missions in the EGTTR.

9. Protected Marine Species Stranding Reports

As part of Eglin NRO's marine mitigation program, protected marine species strandings are reviewed and analyzed for potential correlation to missions. This section will focus on the marine mammal and sea turtle strandings that occurred on Eglin AFB property during calendar year 2021.

Table 9-1. 2021 Marine Mammal Stranding Records

Date	# of Animals	Species	Location Found	Condition of the Animal(s)
3/01/21	1	Bottlenose dolphin	Approximately .25 miles East of Building A-17 on Eglin AFB, Santa Rosa Island bordering Navarre Beach on Gulf side	Carcass was observed in an advanced state of decomposition with significant scavenger damage. Cause of death could not be determined due to advanced decomposition

One marine mammal stranding occurred on Eglin AFB property during the calendar year 2021. Information on this stranding is presented in Table 9-1. A perinate male bottlenose dolphin stranded on the Gulf side of Santa Rosa Island on Eglin AFB property 25 days after a live 780 TS mission (Spike NLOS mission), and 20.7 NM from the coordinates of that detonation. Only one live weapon was released during the 780 TS mission on February 4, 2021. No other missions were being conducted in the EGTTR at that time or until the stranding discovery. Considering the

elapsed time and distance between the mission and the discovery, it is unlikely the stranding was related to EGTR live mission activities, and without additional guidance from experts Eglin NRO considers the evidence surrounding this stranding inconclusive.

According to the Florida Sea Turtle Stranding and Salvage Network (FLSTSSN) data shown in Figure 9-1, 16 sea turtle strandings (4 from Eglin AFB) were reported in Okaloosa County in 2021, including 9 loggerheads, 5 greens, and 2 Kemp's ridley turtles (FLSTSSN, 2021). One additional individual from Okaloosa County stranded in late December on Eglin AFB, but was not updated on FLSTSSN's website at the time of this report and was therefore not included in Figure 9-1 below. Data for 2021 show that strandings were below the 5- and 10-year averages.

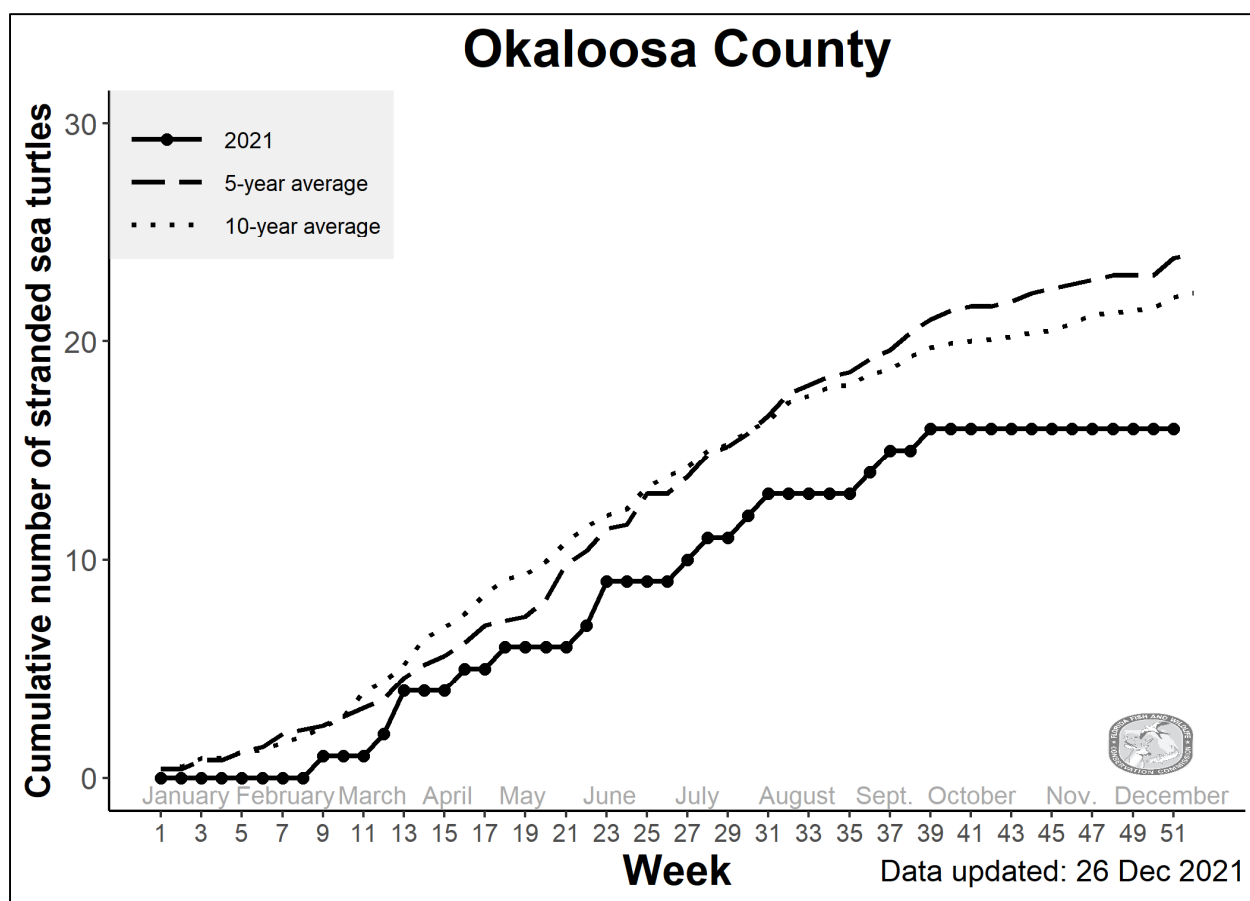


Figure 9-1. Cumulative Numbers of Stranded Sea Turtles in Okaloosa County during 2021 (Ongoing) and the Previous 5-year and 10-year Averages
Source: (FLSTSSN, 2021)

Specifically, for Eglin AFB property in 2021, five turtles were found stranded on Eglin's property on SRI (Okaloosa County) and no turtles were found stranded on Eglin's property in Cape San Blas off St. Joseph Bay (Gulf County). Four of the five individuals are included as part of the total strandings for Okaloosa County in 2021; the one remaining individual stranded in late December 2021 and was not included in the stranding numbers provided by FLSTSSN (2021). This individual turtle has been added here to represent a total of 17 for Okaloosa County. Information on each of these strandings is presented in Table 9-2.

Table 9-2. 2021 Sea Turtle Stranding Records for Eglin AFB

Date	# of Animals	Species	Location Found	Condition of the Animal(s)
3/30/2021	1	Loggerhead	Restricted access portion of Eglin AFB on Santa Rosa Island	Severely decomposed carcass. No external injuries or abnormalities observed.
5/3/2021	1	Kemp's ridley	Restricted access portion of Eglin AFB on Santa Rosa Island	Moderately decomposed carcass. No external injuries or abnormalities observed.
7/7/2021	1	Kemp's ridley	Restricted access portion of Eglin AFB on Santa Rosa Island	Mildly decomposed carcass. No external injuries or abnormalities observed.
9/11/2021	1	Loggerhead	Restricted access portion of Eglin AFB on Santa Rosa Island	Mildly decomposed carcass. Deep propeller wounds observed from center to posterior portion of carapace. No other external injuries or abnormalities observed.
12/21/2021	1	Kemp's ridley	Public access portion of Eglin AFB on Santa Rosa Island	Severely decomposed/dried carcass; partially buried in the sand. No external injuries or abnormalities observed.

The loggerhead stranding that occurred on March 30, 2021 was well over a month from the 780TS Spike NLOS mission where a live weapon was released on February 4, 2021, and an AFSOC live mission on February 17, 2021. Judging from the span of time between the live missions and the stranding, Eglin NRO believes this stranding was not related to EGTTTR live mission activities. The Kemp's ridley stranding that occurred on May 3, 2021 was 20 days after an AFSOC live mission. Given the moderately decomposed state of the carcass and 20-day lapse in time between the live mission and stranding, Eglin NRO believes this stranding was not related to EGTTTR live mission activities. Eglin NRO believes that the Kemp's ridley stranding from July and the loggerhead stranding from September are not related to any live mission activities in the EGTTTR since mission user groups didn't conduct live missions from May through October 2021. Finally, the Kemp's ridley stranding from December 21, 2021 was five days after the 96OG Rapid Dragon mission where a live weapon was released on December 16, 2021. Judging from the severely decomposed state of the carcass and the fact that it was dried and partially buried in the sand, Eglin NRO concludes this stranding was not related to EGTTTR live mission activities.

10. Conclusion

No additional impacts to protected marine species have been reported since the missions were completed on December 16, 2021. Eglin NRO believes this document fulfills the reporting

requirements outlined in the LOA and PBO, the findings of which indicate Eglin successfully implemented mitigation and monitoring requirements. Please direct questions to Rodney Felix, Endangered Species Biologist, Eglin Natural Resources Office, (850) 883-1153 or (850) 951-3713, rodney.felix.1@us.af.mil.

11. References

FLSTSSN. (2021). *Current Information on Stranded Sea Turtles in Florida*. Retrieved December 27, 2021, from Florida Sea Turtle Stranding and Salvage Network: <http://ocean.floridamarine.org/seaturtle/flstssn/cOkaloosa.html>

12. Signatures

2021 Annual Report on EGTTR Mission Activities

Final Report

Eglin Air Force Base, Florida

Prepared by: Brail Stephens 03/09/2022
Brail Stephens
Marine Scientist
Eglin Natural Resources/Jacobs Engineering
Date

Reviewed by: _____
Rodney Felix
Endangered Species Biologist
Eglin Natural Resources Office
Date

Justin Johnson
Supervisory Biologist
Eglin Natural Resources Office
Date

Bruce Hagedorn
Chief
Eglin Natural Resources Office
Date

Appendix A

Protected Marine Species Observer Report Forms

PROTECTED SPECIES OBSERVER REPORT FORM

Use a separate form for each mission day

****Complete this section regardless of whether or not protected species are sighted****

Date: 5 JAN	Observer Name: FAMA, A	Organization: 413 FLS
Mission Description: GAU-2 MINI GUN FLIGHT TEST		
Mission Location: Latitude: N 30 07.19 Longitude: W 086 36.23		
# of rounds used (enter for all that apply): 25 mm _____ 40 mm _____ 105 mm Full Up _____ 105 mm Training Round _____ 30 mm _____ Other (please specify): 7.62		
Were any protected species or indicators observed while en route? Y (N)		
Arrival Time (Local) at Site: 1420 Sea State (see chart below): 1		
Pre-Mission Survey: Start time (Local): 1420 End time (Local): 1440		
Were any protected species or indicators observed? Y (N)		
Mission Times: Start time (Local): 1440 End time (Local): 1550		
Were any protected species or indicators observed? Y (N)		
Post-Mission Survey: Start time (Local): 1550 End time (Local): 1615		
Were any protected species or indicators observed? Y (N)		
If the mission was cancelled due to environmental concerns, please state the reason(s): N/A		

**If "Yes", complete the following section for each sighting that was observed.*

To report a dead or injured protected animal:

Daytime Missions POC: Rodney Felix: 883-1153 or Brail Stephens: 882-8433

Nighttime Missions POC: Justin Johnson: 978-3251 or Bruce Hagedorn: 902-6004

Sea State Scale for Marine Mammal and Sea Turtle Observation

Scale Number	Sea Conditions
0	Flat calm, no waves or ripples
1	Small wavelets, few if any whitecaps
2	Whitecaps on 0-33% of surface; 0.3 to 0.6 m (1 to 2 feet) waves
3	Whitecaps on 33-50% of surface; 0.6 to 0.9 m (2 to 3 feet) waves
4	Whitecaps on greater than 50% of surface; greater than 0.9 m (3 feet) waves

Sign and submit this completed form and sighting information to Eglin Natural Resources within 48 hours after completion of the mission.

POC: Brail Stephens: brail.stephens.1.ctr@us.af.mil; 882-8433

By electronically signing this form, I certify that: 1) I have successfully completed the Marine Species Observer Training course within that last year; 2) I served as the Protected Species Observer for the mission described above; 3) I abided by all the mitigation requirements and monitoring procedures outlined in Eglin's Letter of Authorization for Air-to-Surface Gunnery Missions in the Eglin Gulf Test and Training Range; 4) All the information on this form is true and accurate to the best of my knowledge; 5) I agree to follow up with Eglin Natural Resources on any questions or requests for additional information.

Signature: 

Date: 5 JAN 21

PROTECTED SPECIES OBSERVER REPORT FORM

Use a separate form for each mission day

****Complete this section regardless of whether or not protected species are sighted****

Date: <u>8 JAN</u>	Observer Name: <u>FAMA</u>	Organization: <u>413 FCS</u>
Mission Description:		
Mission Location: <u>N 30 05.94</u> Latitude: <u>13 10 85</u> Longitude: <u>W 086 12.42</u>		
# of rounds used (enter for all that apply): 25 mm <u> </u> 40 mm <u> </u> 105 mm Full Up <u> </u> 105 mm Training Round <u> </u> 30 mm <u>X</u> Other (please specify): <u>7.62</u>		
Were any protected species or indicators observed while en route? <u>Y</u> <u>(N)</u>		
Arrival Time (Local) at Site: <u>1102L</u>		Sea State (see chart below): <u>2</u>
Pre-Mission Survey: Start time (Local): <u>1102L</u> End time (Local): <u>1130L</u>		
Were any protected species or indicators observed? <u>Y</u> <u>(N)</u>		
Mission Times: Start time (Local): <u>1135L</u> End time (Local): <u>1220L</u>		
Were any protected species or indicators observed? <u>Y</u> <u>(N)</u>		
Post-Mission Survey: Start time (Local): <u>1220L</u> End time (Local): <u>1230L</u>		
Were any protected species or indicators observed? <u>Y</u> <u>(N)</u>		
If the mission was cancelled due to environmental concerns, please state the reason(s): <u>N/A</u>		

**If "Yes", complete the following section for each sighting that was observed.*

To report a dead or injured protected animal:

Daytime Missions POC: Rodney Felix: 883-1153 or Brail Stephens: 882-8433

Nighttime Missions POC: Justin Johnson: 978-3251 or Bruce Hagedorn: 902-6004

Sea State Scale for Marine Mammal and Sea Turtle Observation

Scale Number	Sea Conditions
0	Flat calm, no waves or ripples
1	Small wavelets, few if any whitecaps
2	Whitecaps on 0-33% of surface; 0.3 to 4.6 m (1 to 2 feet) waves
3	Whitecaps on 33-50% of surface; 0.6 to 0.9 m (2 to 3 feet) waves
4	Whitecaps on greater than 50% of surface; greater than 0.9 m (3 feet) waves

Sign and submit this completed form and sighting information to Eglin Natural Resources within 48 hours after completion of the mission.

POC: Brail Stephens: brail.stephens.1.ctr@us.af.mil; 882-8433

By electronically signing this form, I certify that: 1) I have successfully completed the Marine Species Observer Training course within that last year. 2) I served as the Protected Species Observer for the mission described above. 3) I abided by all the mitigation requirements and monitoring procedures outlined in Eglin's Letter of Authorization for Air-to-Surface Gummy Missions in the Eglin Gulf Test and Training Range. 4) All the information on this form is true and accurate to the best of my knowledge. 5) I agree to follow up with Eglin Natural Resources on any questions or requests for additional information.

Signature: 

Date: 8 JAN 21

PROTECTED SPECIES OBSERVER REPORT FORM

Use a separate form for each mission day

****Complete this section regardless of whether or not protected species are sighted****

Date: 3 FEB 21	Observer Name: FAMA, A	Organization: 413 BJS
Mission Description: GAW-22 MIN: GUN LIVE FIRE		
Mission Location: Latitude: N30 05.94 Longitude: W086 12.92		
# of rounds used (enter for all that apply): 25 mm _____ 40 mm _____ 105 mm Full Up _____ 105 mm Training Round _____ 30 mm X Other (please specify): 7.62 mm		
Were any protected species or indicators observed while en route? Y (N)		
Arrival Time (Local) at Site: 1415L Sea State(see chart below): 1		
Pre-Mission Survey: Start time (Local): 1415 End time (Local): 1430		
Were any protected species or indicators observed? Y (N)		
Mission Times: Start time (Local): 1430 End time (Local): 1520		
Were any protected species or indicators observed? Y (N)		
Post-Mission Survey: Start time (Local): 1520 End time (Local): 1530		
Were any protected species or indicators observed? Y (N)		
If the mission was cancelled due to environmental concerns, please state the reason(s):		

*If "Yes", complete the following section for each sighting that was observed.

To report a dead or injured protected animal:

Daytime Missions POC: Rodney Felix: 883-1153 or Brail Stephens: 882-8433

Nighttime Missions POC: Justin Johnson: 978-3251 or Bruce Hagedorn: 902-6004

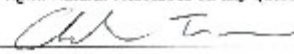
Sea State Scale for Marine Mammal and Sea Turtle Observation

Scale Number	Sea Conditions
0	Flat calm, no waves or ripples
1	Small wavelets, few if any whitecaps
2	Whitecaps on 0-33% of surface; 0.3 to 0.6 m (1 to 2 feet) waves
3	Whitecaps on 33-50% of surface; 0.6 to 0.9 m (2 to 3 feet) waves
4	Whitecaps on greater than 50% of surface; greater than 0.9 m (3 feet) waves

Sign and submit this completed form and sighting information to Eglin Natural Resources within 48 hours after completion of the mission.

POC: Brail Stephens: brail.stephens.1.c.m@us.af.mil; 882-8433

By electronically signing this form, I certify that: 1) I have successfully completed the Marine Species Observer Training course within that last year. 2) I served as the Protected Species Observer for the mission described above. 3) I abided by all the mitigation requirements and monitoring procedures outlined in Eglin's Letter of Authorization for Air-to-Surface Gunnery Missions in the Eglin Gulf Test and Training Range. 4) All the information on this form is true and accurate to the best of my knowledge. 5) I agree to follow up with Eglin Natural Resources on any questions or requests for additional information.

Signature: 

Date: 3 FEB 21

PROTECTED SPECIES OBSERVER REPORT FORM

Use a separate form for each mission day

****Complete this section regardless of whether or not protected species are sighted****

Date: <u>8 FEB</u>	Observer Name: <u>FAMA</u>	Organization: <u>713 FLS</u>
Mission Description: <u>GAU-2 LIVE FIRE</u>		
Mission Location: Latitude: <u>30 08.07</u> Longitude: <u>W 086 28.89</u>		
# of rounds used (enter for all that apply): 25 mm <u> </u> 40 mm <u> </u> 105 mm Full Up <u> </u> 105 mm Training Round <u> </u> 30 mm <u>X</u> Other (please specify): <u>762 mm</u>		
Were any protected species or indicators observed while en route? <u>Y (N)</u>		
Arrival Time (Local) at Site: <u>1345</u>	Sea State(see chart below): <u>1</u>	
Pre-Mission Survey: Start time (Local): <u>1350</u> End time (Local): <u>1420</u>		
Were any protected species or indicators observed? <u>Y (N)</u>		
Mission Times: Start time (Local): <u>1420</u> End time (Local): <u>1440</u>		
Were any protected species or indicators observed? <u>Y (N)</u>		
Post-Mission Survey: Start time (Local): <u>1440</u> End time (Local): <u>1450</u>		
Were any protected species or indicators observed? <u>Y (N)</u>		
If the mission was cancelled due to environmental concerns, please state the reason(s): <u> </u>		

**If "Yes", complete the following section for each sighting that was observed.*

To report a dead or injured protected animal:

Daytime Missions POC: Rodney Felix: 882-1153 or Brail Stephens: 882-8433

Nighttime Missions POC: Justin Johnson: 978-3251 or Bruce Hagedorn: 902-6004

Sea State Scale for Marine Mammal and Sea Turtle Observation

Scale Number	Sea Conditions
0	Flat calm, no waves or ripples
1	Small wavelets, few if any whitecaps
2	Whitecaps on 0-33% of surface; 0.3 to 0.6 m (1 to 2 feet) waves
3	Whitecaps on 33-50% of surface; 0.6 to 0.9 m (2 to 3 feet) waves
4	Whitecaps on greater than 50% of surface; greater than 0.9 m (3 feet) waves

Sign and submit this completed form and sighting information to Eglin Natural Resources within 48 hours after completion of the mission.

POC: Brail Stephens: brail.stephens.1.ctr@us.af.mil; 882-8433

By electronically signing this form, I certify that: 1) I have successfully completed the Marine Species Observer Training course within that last year. 2) I served as the Protected Species Observer for the mission described above. 3) I abided by all the mitigation requirements and monitoring procedures outlined in Eglin's Letter of Authorization for Air-to-Surface Gunnery Missions in the Eglin Gulf Test and Training Range. 4) All the information on this form is true and accurate to the best of my knowledge. 5) I agree to follow up with Eglin Natural Resources on any questions or requests for additional information.

Signature: 

Date: 8 FEB 21

Last updated 4/18/2019

PROTECTED SPECIES OBSERVER REPORT FORM**Use a separate form for each mission day******Complete this section regardless of whether or not protected species are sighted****

Date: 17 FEB	Observer Name: FAMA	Organization: 413 FLS
Mission Description: GAU-2		
Mission Location: Latitude: N3005.94 Longitude: W08612.42		
# of rounds used (enter for all that apply): 25 mm _____ 40 mm _____ 105 mm Full Up _____ 105 mm Training Round _____ 30 mm <input checked="" type="checkbox"/> Other (please specify): 7.62 mm		
Were any protected species or indicators observed while en route? Y <input checked="" type="checkbox"/> N		
Arrival Time (Local) at Site: 1030		Sea State (see chart below): 1
Pre-Mission Survey: Start time (Local): 1030 End time (Local): 1050		
Were any protected species or indicators observed? Y <input checked="" type="checkbox"/> N		
Mission Times: Start time (Local): 1050 End time (Local): 1140		
Were any protected species or indicators observed? Y <input checked="" type="checkbox"/> N		
Post-Mission Survey: Start time (Local): 1140 End time (Local): 1145		
Were any protected species or indicators observed? Y <input checked="" type="checkbox"/> N		
If the mission was cancelled due to environmental concerns, please state the reason(s):		

*If "Yes", complete the following section for each sighting that was observed.

To report a dead or injured protected animal:

Daytime Missions POC: Rodney Felix: 883-1153 or Brail Stephens: 882-8433

Nighttime Missions POC: Justin Johnson: 978-3251 or Bruce Hagedorn: 902-6004

Sea State Scale for Marine Mammal and Sea Turtle Observation

Scale Number	Sea Conditions
0	Flat calm, no waves or ripples
1	Small wavelets, few if any whitecaps
2	Whitecaps on 0-33% of surface; 0.3 to 0.6 m (1 to 2 feet) waves
3	Whitecaps on 33-50% of surface; 0.6 to 0.9 m (2 to 3 feet) waves
4	Whitecaps on greater than 50% of surface; greater than 0.9 m (3 feet) waves

Sign and submit this completed form and sighting information to Eglin Natural Resources within 48 hours after completion of the mission.

POC: Brail Stephens: brail.stephens.1.ctr@us.af.mil; 882-8433

By electronically signing this form, I certify that: 1) I have successfully completed the Marine Species Observer Training course within that last year. 2) I served as the Protected Species Observer for the mission described above. 3) I abided by all the mitigation requirements and monitoring procedures outlined in Eglin's Letter of Authorization for Air-to-Surface Gunnery Missions in the Eglin Gulf Test and Training Range. 4) All the information on this form is true and accurate to the best of my knowledge. 5) I agree to follow up with Eglin Natural Resources on any questions or requests for additional information.

Signature: 

Date: 17 FEB 21

From: [BURNS, ANDREW R Lt Col USAF AFMC 413 FLTS/DO](#)
To: [STEPHENS, BRAIL S CTR USAF AFMC 96 CEG/CEIEA](#)
Cc: [FAMA, ANDREW P Lt Col USAF AFMC USAF TPS/DOV](#); [413 FLTS/ADO Distribution List](#); [RABORN, GRANT M Maj USAF AFSOC 319 SOS/XP](#); [DEARMAS, EVALDO JR Capt USAF AFSOC 34 SOS/RA](#); [LASHOMB, JONATHAN D Capt USAF AFSOC 1 SOW/1 SOW/XP](#); [DULEY, THOMAS E GS-12 USAF AFSOC 1 SOW/XP](#)
Subject: RE: Protected Marine Species Observer Report Forms questions
Date: Wednesday, January 19, 2022 7:16:32 PM

Brail,
For your report, all 5 of those missions could be described as "HH-60W GAU-2 live fire testing".
Total rounds counts, all 7.62mm:
5 JAN: 2,200 rds
8 JAN: 500 rds
3 FEB: 3,200 rds
8 FEB: 5,400 rds
17 FEB: 5,400 rds

Very Respectfully,
Lt Col A Burns

ANDREW R. BURNS, Lt Col, USAF
Operations Officer
413th Flight Test Squadron, Hurlburt Field, FL
Hurlburt: (850) 884-7263 DSN: 579-7263
Duke Field: (850) 883-4707 DSN: 875-4707
Cell: (563) 650-2113
andrew.burns.2@us.af.mil

From: [DULEY, THOMAS E GS-12 USAF AFSOC 1 SOW/XP](#) <thomas.duley.1@us.af.mil>
Sent: Wednesday, January 19, 2022 7:01 PM
To: [STEPHENS, BRAIL S CTR USAF AFMC 96 CEG/CEIEA](#) <brail.stephens.1.ctr@us.af.mil>
Cc: [FAMA, ANDREW P Lt Col USAF AFMC USAF TPS/DOV](#) <andrew.fama@us.af.mil>; [413 FLTS/ADO Distribution List](#) <413FLTS.ADO.DistributionList@us.af.mil>; [RABORN, GRANT M Maj USAF AFSOC 319 SOS/XP](#) <grant.raborn@us.af.mil>; [DEARMAS, EVALDO JR Capt USAF AFSOC 34 SOS/RA](#) <evaldo.dearmas@us.af.mil>; [LASHOMB, JONATHAN D Capt USAF AFSOC 1 SOW/1 SOW/XP](#) <jonathan.lashomb.1@us.af.mil>
Subject: FW: Protected Marine Species Observer Report Forms questions

Brail, Happy New Year to you and your family! To be on the safe side and honest brokers, let me get with the CV-22 folks at the 413 FLTS and see what the average or normal rounds carried is. We'll assume they expended them all and give you that number. Does that work? Still need to do Greek lunch with you, Amanda, and the rest of the folks at CEIEA...

V/r
Tom

PROTECTED SPECIES OBSERVER REPORT FORM

Use a separate form for each mission day

Complete this section regardless of whether or not protected species are sighted

Date: 24 Jan 24	Observer Name: DIERKE	Organization: 415 FES
Mission Description: A-2 INE from GAN-2		
Mission Location: Latitude: Longitude:		
# of rounds used (enter for all that apply): 25 mm 40 mm 105 mm Full Up 105 mm Training Round 30 mm Other (please specify): 7.62 mm x 5,400		
Were any protected species or indicators observed while en route? Y <input checked="" type="checkbox"/> N		
Arrival Time (Local) at Site: 1530		Sea State(see chart below): 1
Pre-Mission Survey: Start time (Local): 1530 End time (Local): 1545		
Were any protected species or indicators observed? Y <input checked="" type="checkbox"/> N		
Mission Times: Start time (Local): 1530 End time (Local): 1600-1630		
Were any protected species or indicators observed? Y <input checked="" type="checkbox"/> N		
Post-Mission Survey: Start time (Local): 1630 End time (Local): 1645		
Were any protected species or indicators observed? Y <input checked="" type="checkbox"/> N		
If the mission was cancelled due to environmental concerns, please state the reason(s):		

*If "Yes", complete the following section for each sighting that was observed.

To report a dead or injured protected animal:

Daytime Missions POC: Rodney Felix: 883-1153 or Brail Stephens: 882-8433

Nighttime Missions POC: Justin Johnson: 978-3251 or Bruce Hagedorn: 902-6004

Sea State Scale for Marine Mammal and Sea Turtle Observation

Scale Number	Sea Conditions
0	Flat calm, no waves or ripples
1	Small wavelets, few if any whitecaps
2	Whitecaps on 0-33% of surface; 0.3 to 0.6 m (1 to 2 feet) waves
3	Whitecaps on 33-50% of surface; 0.6 to 0.9 m (2 to 3 feet) waves
4	Whitecaps on greater than 50% of surface; greater than 0.9 m (3 feet) waves

Sign and submit this completed form and sighting information to Eglin Natural Resources within 48 hours after completion of the mission.

POC: Brail Stephens: brail.stephens.1.ctr@us.af.mil; 882-8433

By electronically signing this form, I certify that: 1) I have successfully completed the Marine Species Observer Training course within that last year. 2) I served as the Protected Species Observer for the mission described above. 3) I abided by all the mitigation requirements and monitoring procedures outlined in Eglin's Letter of Authorization for Air-to-Surface Gunnery Missions in the Eglin Gulf Test and Training Range. 4) All the information on this form is true and accurate to the best of my knowledge. 5) I agree to follow up with Eglin Natural Resources on any questions or requests for additional information.

Signature: 

Date: 24 Jan 24

From: [DIRKES, WAYNE K Lt Col USAF AFMC 413 FLTS/CC](#)
To: [STEPHENS, BRAIL S CTR USAF AFMC 96 CEG/CEIEA](#)
Subject: RE: Protected species observer report
Date: Wednesday, January 5, 2022 8:27:32 PM

Roughly 30 07.20N 86 31.94 W

WAYNE K. DIRKES, Lt Col, USAF
Commander, 413th Flight Test Squadron
Work: 850-884-3589
Cell: 850-685-1862

From: STEPHENS, BRAIL S CTR USAF AFMC 96 CEG/CEIEA <brail.stephens.1.ctr@us.af.mil>
Sent: Tuesday, January 4, 2022 2:22 PM
To: DIRKES, WAYNE K Lt Col USAF AFMC 413 FLTS/CC <wayne.dirkes@us.af.mil>
Subject: RE: Protected species observer report

Lt Col Dirkes,

My name is Brail Stephens and I work for Eglin Natural Resources. I'm reaching out to you because you turned in a Protected Marine Species Observer Report Form for a gunnery mission in the EGTTTR back in early 2021 (specifically for 1/21/2021). I've attached the report here for reference. We have to compile information for an annual report that is submitted to the National Marine Fisheries Service (NMFS) that details all testing and training activities that Eglin conducts in the EGTTTR. As I was sorting through the observer report forms, I noticed that you didn't fill out the latitude/longitude of the mission location. I apologize that we didn't catch this at an earlier time (I was actually out on maternity leave at that time), but is there any way you might be able to provide us with this information – just a general coordinate location would work fine. It's important for us to provide this information to the NMFS. Any help would be greatly appreciated!

V/R,

Ms. Brail Stephens

Biologist

Jacobs Engineering Group I Eglin AFB Natural Resources

Office: 850.882.8433 | Mobile: 850.520.0063

Email: brail.stephens.1.ctr@us.af.mil

From: DIRKES, WAYNE K Lt Col USAF AFMC 413 FLTS/CC <wayne.dirkes@us.af.mil>
Sent: Thursday, January 21, 2021 6:23 PM
To: STEPHENS, BRAIL S CTR USAF AFMC 96 CEG/CEIEA <brail.stephens.1.ctr@us.af.mil>
Subject: Protected species observer report

For mission today

Sent with BlackBerry Work

PROTECTED SPECIES OBSERVER REPORT FORM

Use a separate form for each mission day

****Complete this section regardless of whether or not protected species are sighted****

Date: 5 Apr 2021	Observer Name: SHADOW71/FOX,J	Organization: 73 SOS
Mission Description: Live Fire over W151 A1/A3		
Mission Location: Latitude: 29 40 19 N Longitude: 86 36 85 W		
# of rounds used (enter for all that apply): 25 mm 40 mm 105 mm Full Up 30 105 mm Training Round 300 30 mm Other (please specify):		
Were any protected species or indicators observed while en route*? Y--N NO		
Arrival Time (Local) at Site: 1130 Sea State(see chart below): 2		
Pre-Mission Survey: Start time (Local): 1145 End time (Local): 1200		
Were any protected species or indicators observed*? No		
Mission Times: Start time (Local): 1200 End time (Local): 1345		
Were any protected species or indicators observed*? No		
Post-Mission Survey: Start time (Local): 1345 End time (Local): 1400		
Were any protected species or indicators observed*? No		
If the mission was cancelled due to environmental concerns, please state the reason(s):		

*If "Yes", complete the following section for each sighting that was observed.

To report a dead or injured protected animal:

Daytime Missions POC: Rodney Felix: 883-1153 or Brail Stephens: 882-8433

Nighttime Missions POC: Justin Johnson: 978-3251 or Bruce Hagedorn: 902-6004

Sea State Scale for Marine Mammal and Sea Turtle Observation

Scale Number	Sea Conditions
0	Flat calm, no waves or ripples
1	Small wavelets, few if any whitecaps
2	Whitecaps on 0-33% of surface; 0.3 to 0.6 m (1 to 2 feet) waves
3	Whitecaps on 33-50% of surface; 0.6 to 0.9 m (2 to 3 feet) waves
4	Whitecaps on greater than 50% of surface; greater than 0.9 m (3 feet) waves

Sign and submit this completed form and sighting information to Eglin Natural Resources within 48 hours after completion of the mission.

POC: Brail Stephens: brail.stephens.1.ctr@us.af.mil; 882-8433

By electronically signing this form, I certify that: 1) I have successfully completed the Marine Species Observer Training course within that last year. 2) I served as the Protected Species Observer for the mission described above. 3) I abided by all the mitigation requirements and monitoring procedures outlined in Eglin's Letter of Authorization for Air-to-Surface Gunnery Missions in the Eglin Gulf Test and Training Range. 4) All the information on this form is true and accurate to the best of my knowledge. 5) I agree to follow up with Eglin Natural Resources on any questions or requests for additional information.

Signature: FOX.JASON.EDWARD.1058707755

Digitally signed by FOX.JASON.EDWARD.1058707755
Date: 2021.04.05 17:25:07 -0500

Date: 5 Apr 2021

PROTECTED SPECIES OBSERVER REPORT FORM

Use a separate form for each mission day

****Complete this section regardless of whether or not protected species are sighted****

Date:	4/13/21	Observer Name:	Maj Ryan McCoy	Organization:	73 SOS
Mission Description:	AC-130 Live Fire W-151A				
Mission Location:					
Latitude:	N 30 05.67	Longitude:	W 086 38.5		
# of rounds used (enter for all that apply):					
25 mm	40 mm	105 mm Full Up	30	105 mm Training Round	
30 mm	Other (please specify): 300x30mm				
Were any protected species or indicators observed while en route*?	No				
Arrival Time (Local) at Site:	19:30	Sea State(see chart below):	2		
Pre-Mission Survey:					
Start time (Local):	19:30	End time (Local):	19:40		
Were any protected species or indicators observed*?	No				
Mission Times:					
Start time (Local):	19:40	End time (Local):	21:20		
Were any protected species or indicators observed*?	No				
Post-Mission Survey:					
Start time (Local):	21:20	End time (Local):	21:30		
Were any protected species or indicators observed*?	No				
If the mission was cancelled due to environmental concerns, please state the reason(s):	N/A				

*If "Yes", complete the following section for each sighting that was observed.

To report a dead or injured protected animal:

Daytime Missions POC: Rodney Felix: 883-1153 or Amanda Robydek: 882-8395

Nighttime Missions POC: Justin Johnson: 978-3251 or Bruce Hagedorn: 902-6004

Sea State Scale for Marine Mammal and Sea Turtle Observation

Scale Number	Sea Conditions
0	Flat calm, no waves or ripples
1	Small wavelets, few if any whitecaps
2	Whitecaps on 0-33% of surface; 0.3 to 0.6 m (1 to 2 feet) waves
3	Whitecaps on 33-50% of surface; 0.6 to 0.9 m (2 to 3 feet) waves
4	Whitecaps on greater than 50% of surface; greater than 0.9 m (3 feet) waves

Sign and submit this completed form and sighting information to Eglin Natural Resources within 48 hours after completion of the mission.

POC: Amanda Robydek: amanda.robbydek.ctr@us.af.mil; 882-8395

By electronically signing this form, I certify that: 1) I have successfully completed the Marine Species Observer Training course within that last year. 2) I served as the Protected Species Observer for the mission described above. 3) I abided by all the mitigation requirements and monitoring procedures outlined in Eglin's Letter of Authorization for Air-to-Surface Gunnery Missions in the Eglin Gulf Test and Training Range. 4) All the information on this form is true and accurate to the best of my knowledge. 5) I agree to follow up with Eglin Natural Resources on any questions or requests for additional information.

Signature: MCCOY.RYAN.PATRICK.1291053463 Digitally signed by MCCOY.RYAN.PATRICK.1291053463
Date: 2021.04.13 02:03:14 -05'00'

Date: 4/13/21

PROTECTED SPECIES OBSERVER REPORT FORM

Use a separate form for each mission day

****Complete this section regardless of whether or not protected species are sighted****

Date: 14 Oct 21	Observer Name: Capt Lefebvre	Organization: 73 SOS
Mission Description: W-151 A1/A3 Live Fire		
Mission Location: Latitude: 30.1824458 Longitude: -088.5457714		
# of rounds used (enter for all that apply): 25 mm 40 mm 105 mm Full Up 30 105 mm Training Round 300 30 mm Other (please specify):		
Were any protected species or indicators observed while en route*? Y (N)		
Arrival Time (Local) at Site: 2100 Sea State(see chart below): 1		
Pre-Mission Survey: Start time (Local): 2100 End time (Local): 2115		
Were any protected species or indicators observed*? No		
Mission Times: Start time (Local): 2100 End time (Local): 2320		
Were any protected species or indicators observed*? No		
Post-Mission Survey: Start time (Local): 2300 End time (Local): 2320		
Were any protected species or indicators observed*? No		
If the mission was cancelled due to environmental concerns, please state the reason(s): N/A		

*If "Yes", complete the following section for each sighting that was observed.

To report a dead or injured protected animal:

Daytime Missions POC: Rodney Felix: 883-1153 or Brail Stephens: 882-8433

Nighttime Missions POC: Justin Johnson: 978-3251 or Bruce Hagedorn: 902-6004

Sea State Scale for Marine Mammal and Sea Turtle Observation

Scale Number	Sea Conditions
0	Flat calm, no waves or ripples
1	Small wavelets, few if any whitecaps
2	Whitecaps on 0-33% of surface; 0.3 to 0.6 m (1 to 2 feet) waves
3	Whitecaps on 33-50% of surface; 0.6 to 0.9 m (2 to 3 feet) waves
4	Whitecaps on greater than 50% of surface; greater than 0.9 m (3 feet) waves

Sign and submit this completed form and sighting information to Eglin Natural Resources within 48 hours after completion of the mission.

POC: Brail Stephens: brail.stephens.1.ctr@us.af.mil; 882-8433

By electronically signing this form, I certify that: 1) I have successfully completed the Marine Species Observer Training course within that last year. 2) I served as the Protected Species Observer for the mission described above. 3) I abided by all the mitigation requirements and monitoring procedures outlined in Eglin's Letter of Authorization for Air-to-Surface Gunnery Missions in the Eglin Gulf Test and Training Range. 4) All the information on this form is true and accurate to the best of my knowledge. 5) I agree to follow up with Eglin Natural Resources on any questions or requests for additional information.

Signature: LEFEBVRE EUGENE.HOMER.1395812030 Digitally signed by LEFEBVRE EUGENE.HOMER.1395812030
Date: 2021.10.14 03:06:38 -0500

Date: 14 Oct 21

PROTECTED SPECIES OBSERVER REPORT FORM

Use a separate form for each mission day

****Complete this section regardless of whether or not protected species are sighted****

Date: <u>8 Nov 21</u>	Observer Name: <u>Spooky 42</u>	Organization: <u>4 SOS</u>
Mission Description: <u>Live Fire 10-151 H-1</u>		
Mission Location: <u>Center of AB WIS 1</u>		
Latitude: _____ Longitude: _____		
# of rounds used (enter for all that apply): 25 mm _____ 40 mm <u>8</u> 105 mm Full Up _____ 105 mm Training Round _____ <u>18</u> 30 mm _____ Other (please specify): _____		
Were any protected species or indicators observed while en route*? Select one <u>0</u>		
Arrival Time (Local) at Site: <u>1420L</u> Sea State(see chart below): Select one _____		
Pre-Mission Survey: Start time (Local): <u>1425</u> End time (Local): <u>1436</u>		
Were any protected species or indicators observed*? Select one <u>NO</u>		
Mission Times: Start time (Local): <u>1444</u> End time (Local): <u>1517</u>		
Were any protected species or indicators observed*? Select one <u>No</u>		
Post-Mission Survey: <u>NA Unable due to JFE</u>		
Start time (Local): _____ End time (Local): _____		
Were any protected species or indicators observed*? Select one _____		
If the mission was cancelled due to environmental concerns, please state the reason(s): _____		

**If "Yes", complete the following section for each sighting that was observed.*

To report a dead or injured protected animal:

Daytime Missions POC: Rodney Felix: 883-1153 or Brail Stephens: 882-8433

Nighttime Missions POC: Justin Johnson: 850-978-3251 or Bruce Hagedorn: 850-902-6004

Sea State Scale for Marine Mammal and Sea Turtle Observation

Scale Number	Sea Conditions
<u>0</u>	Flat calm, no waves or ripples
1	Small wavelets, few if any whitecaps
2	Whitecaps on 0-33% of surface; 0.3 to 0.6 m (1 to 2 feet) waves
3	Whitecaps on 33-50% of surface; 0.6 to 0.9 m (2 to 3 feet) waves
4	Whitecaps on greater than 50% of surface; greater than 0.9 m (3 feet) waves

Sign and submit this completed form and sighting information to Eglin Natural Resources within 48 hours after completion of the mission.

POC: Brail Stephens: brail.stephens.1.ctr@us.af.mil; 882-8433

By electronically signing this form, I certify that: 1) I have successfully completed the Marine Species Observer Training course within that last year. 2) I served as the Protected Species Observer for the mission described above. 3) I abided by all the mitigation requirements and monitoring procedures outlined in Eglin's Letter of Authorization for Air-to-Surface Gunnery Missions in the Eglin Gulf Test and Training Range. 4) All the information on this form is true and accurate to the best of my knowledge. 5) I agree to follow up with Eglin Natural Resources on any questions or requests for additional information.

Signature: _____

Date: 8 Nov 21

Last updated 6/11/2019

From: [TODD, LANE A Capt USAF AFSOC 4 SOS/DOFA](#)
To: [STEPHENS, BRAIL S CTB USAF AFMC 96 CBG/CEIEA](#)
Cc: [4 SOS/ADO Asst Ops Officer \(Distribution List\)](#)
Subject: Protected Species Observer Report Form - Spooky 42 - 8 Nov 2021
Date: Wednesday, November 10, 2021 11:25:41 AM
Attachments: [image2021-11-08-164721.pdf](#)

Good Evening,

Attached is the Observer Form. Spooky 42 Live Fire W151 A1/A3. No observed wildlife during the entirety of the VUL RTB to KHRT early due to an IFE. We're unable to nget the exact location of our live fire but it was generally IVO the Center of W151 A3.

V/R,

From: lane.todd.2@us.af.mil <lane.todd.2@us.af.mil>
Sent: Monday, November 8, 2021 4:47 PM
To: TODD, LANE A Capt USAF AFSOC 4 SOS/DOFA <lane.todd.2@us.af.mil>
Subject:

From: [DULEY, THOMAS E GS-12 USAF AFSOC 1 SOW/XP](#)
To: [STEPHENS, BRAIL S CTR USAF AFMC 96 CEG/CEIEA](#)
Subject: RE: Protected Species Observer Report form - Spooky 42 - 8 Nov 2021
Date: Wednesday, February 9, 2022 2:22:23 PM

Hi, Brail! VUL is a term for the period of time overhead for that specific training event during that sortie (flight). RTB is return to base. KHRT is the airport code for Hurlburt. IFE stands for inflight emergency. IVO stands for in vicinity of. Does that help?

V/r
Tom

From: STEPHENS, BRAIL S CTR USAF AFMC 96 CEG/CEIEA <brail.stephens.1.ctr@us.af.mil>
Sent: Wednesday, February 9, 2022 1:55 PM
To: DULEY, THOMAS E GS-12 USAF AFSOC 1 SOW/XP <thomas.duley.1@us.af.mil>
Subject: FW: Protected Species Observer Report form - Spooky 42 - 8 Nov 2021

Hi Tom!

I'm hoping you can help me out with one more protected marine species observer report form that was turned into Eglin Natural Resources last year. When Capt Lane sent this one to me in November, I immediately reached back out to him asking the questions below. We were missing some vital info from the report form including lat/long (I know he said they were unable to get exact location, but I asked that he provide general coordinates). His response to me is copied in red below. He gave a bunch of acronyms that I have no idea what are. If you look at the email below, you can see I reached back out to him for this info at the beginning of January, but I haven't heard back from him. I basically just need to be able to explain in my annual report to the National Marine Fisheries Service what went wrong in this particular situation and why they were unable to perform the post-mission survey.

Attached is the Observer Form. Spooky 42 Live Fire W151 A1/A3. No observed wildlife during the entirety of the VUL RTB to KHRT early due to an IFE. We're unable to get the exact location of our live fire but it was generally IVO the Center of W151 A3.

Any help is greatly appreciated! I'm close to wrapping up my annual report, but still missing this piece of info!

Thanks,
Brail

Ms. Brail Stephens (she/her)

Biologist
Jacobs Engineering Group I Eglin AFB Natural Resources
Office: 850.882.8433 | Mobile: 850.520.0063