RCS 14-390

EGLIN AIR FORCE BASE
FLORIDA

TEST AREA C-74 COMPLEX RANGE ENVIRONMENTAL ASSESSMENT

FINAL

AUGUST 2015

Report Documentation Page

Form Approved
OMB No. 0704-0188

1. REPORT DATE	2. REPORT TYPE	3. DATES COVERED
21 AUG 2015	**Environmental Assessment**	**00-00-2012 to 00-00-2015**

4. TITLE AND SUBTITLE	5a. CONTRACT NUMBER
Final Range Environmental Assessment for Test Area C-74 Complex at Eglin Air Force Base, Florida	5b. GRANT NUMBER
	5c. PROGRAM ELEMENT NUMBER
6. AUTHOR(S)	5d. PROJECT NUMBER
	5e. TASK NUMBER
	5f. WORK UNIT NUMBER
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) **United States Air Force,Eglin Air Force Base,Valparaiso ,FL,32542**	8. PERFORMING ORGANIZATION REPORT NUMBER
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)	10. SPONSOR/MONITOR'S ACRONYM(S)
	11. SPONSOR/MONITOR'S REPORT NUMBER(S)

12. DISTRIBUTION/AVAILABILITY STATEMENT
Approved for public release; distribution unlimited

13. SUPPLEMENTARY NOTES

14. ABSTRACT
Final Range Environmental Assessment for Test Area C-74 Complex at Eglin Air Force Base, Florida

15. SUBJECT TERMS

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
a. REPORT **unclassified**	b. ABSTRACT **unclassified**	c. THIS PAGE **unclassified**	**Same as Report (SAR)**	**155**	

FINAL FINDING OF NO SIGNIFICANT IMPACT

FOR

TEST AREA C-74 COMPLEX RANGE ENVIRONMENTAL ASSESSMENT, EGLIN AIR FORCE BASE, FLORIDA

RCS 14-390, Revision 1, 2015

This finding, and the analysis upon which it is based, was prepared pursuant to the President's Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA) and its implementing regulations as promulgated at 40 Code of Federal Regulations (CFR) Part 1500 (40 CFR 1500–1508), plus the U.S. Air Force *Environmental Impact Analysis Process* as promulgated at 32 CFR Part 989.

The Department of the Air Force has conducted a Range Environmental Assessment (REA) of the potential environmental consequences associated with testing and training activities at Test Area (TA) C-74 Complex on Eglin Air Force Base (AFB), Florida. That 2015 REA is hereby incorporated by reference into this finding.

PURPOSE AND NEED (REA, Section 1.2.1)

The purpose of and need for the action is to 1) continue TA C-74 Complex missions, 2) maintain NEPA compliance, and 3) update environmental analysis as identified in the 2007 *Test Area C-74 Complex Final Environmental Baseline Document*.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Alternatives are proposed activities and combinations of activities designed to maximize mission support capabilities while maintaining compliance with environmental requirements. The proposed alternatives, which are analyzed in this REA, are:

- No Action Alternative: No change from the 2002 REA Preferred Alternative
- Alternative 1: Authorize Current Baseline Level of Activity (FY2009–2013)

No Action Alternative (REA, Section 2.2.1)

The No Action Alternative continues the authorization of the level of activity defined as the Preferred Alternative from the previous 2002 TA C-74 Complex Programmatic Environmental Assessment (PEA). Authorized mission expenditures evaluated for the No Action alternative include Kinetic Energy Munitions Test Facility (KEMTF) sled track operations, static test detonations, and gunner ballistics testing. The No Action Alternative also captures the increase in gunnery ballistics testing, which occurred in 2002–2003. Live warheads and other munitions not detonated during sled track testing are taken to the TA C-74 Explosive Ordnance Disposal (EOD) detonation site for demolition detonation by the 96th Civil Engineer Squadron, Explosive Ordnance Disposal Flight. These items are not stored but individually detonated following a test. The EOD disposal site is located adjacent to an unimproved road on a terrace plateau in the southwestern portion of TA C-74.

Alternative 1, Authorize Current Baseline (FY 2009 – 2013) Level of Activity (REA, Section 2.2.2)

This alternative would authorize the current level of activity as defined by the TA C-74 mission expenditures for FY 2009 through FY 2013, referred to here as the current baseline. During the current baseline, missions decreased over the level analyzed for the No Action Alternative, which is a continuation of the 2002 Preferred Alternative activity level. During the current baseline period, sled track missions decreased and there were no gunnery ballistic or static testing missions. Alternative 1 is not the Preferred Alternative as it authorizes a lesser amount of mission activity and may not be flexible enough to accommodate surges in testing. This alternative includes corrective actions to correct or repair mission-induced damage to test area natural resources.

ENVIRONMENTAL IMPACTS

Analysis was conducted to determine the potential impacts of the Proposed Action and Alternative 1 on TA C-74 Complex mission and mission support activities on biological and cultural resources of the test area and region of influence. Potential issues that were the focus of this REA included 1) habitat alteration impacts associated with test area wildland fires, 2) listed species noise impacts associated with test area EOD site munition demolition detonations, and 3) cultural resource impacts associated with test area KEMTF sled track expended item retrieval and open grassland-shrubland mechanical vegetation management. For Alternative 1, potential environmental impacts would be similar to those under the No Action alternative. No significant resource impacts have been identified under the Proposed Action or Alternative 1 (REA, Section 2.3).

Biological Resources (REA, Section 3.1.5)

EOD Detonation Site Operations: Noise impacts would likely be limited to startle responses from individual birds or animals. No adverse impacts to sensitive species habitats or breeding and nesting success were identified. TA C-74 Complex biological resource species and habitat impacts could occur but are considered to be nonsignificant.

Wildland Fires: Fires potentially ignited by mission-related activities could affect habitats within and in proximity to TA C-74, and wildfire suppression activities could impact wildlife or cause erosion; however, no adverse impacts to sensitive species or their habitats are anticipated and are considered nonsignificant. In most cases, burn events would likely benefit sensitive species habitat conditions.

Cultural Resources (REA, Section 3.2.5)

The Air Force does not anticipate adverse effects to historic properties from Alternative 1 or the No Action Alternative if specific resource areas are avoided during range management activities. Site 8WL2092 and its surrounding buffer are considered a restricted access area and will continue to be avoided by range personnel. In addition, the small unsurveyed area on the southwestern boundary of the range is also subject to avoidance. Current mission activities will be restricted from these known cultural resource locations to avoid the risk of any potential impacts.

Cumulative Impacts (REA, Section 4)

Biological Resources: The sandhill association longleaf pine ecosystems in proximity to the TA C-74 Complex are actively managed by Eglin Natural Resources through prescribed burning and other techniques. Increases in fire-starting military missions associated with some Eglin test areas other than TA C-74 could increase wildland fire events and support requirements. TA C-74 mission-generated wildfires that spread into adjoining longleaf pine communities are not anticipated to result in adverse impacts, since these are currently prescribed burn areas with relatively low fuel loads. Impacts are most likely to be beneficial to affected sandhill ecosystem plant and animal communities. In addition, no cumulative impacts to potential timber management or logging operations would likely occur.

Cultural Resources: With the avoidance of the unsurveyed area on the southwestern boundary of TA C-74 and Site 8WL2092, no impacts would occur to cultural resources. In conjunction with other past present and future projects adhering to Eglin AFB Instruction 13-212, and the Eglin AFB Integrated Cultural Resource Management Plan standard operating policies, no cumulative impacts to cultural resources would be anticipated.

PUBLIC NOTICE

A public notice was published in the *Northwest Florida Daily News* on June 19, 2015 inviting the public to review and comment on the Draft Final REA and Draft Finding of No Significant Impact. The public comment period closed on July 18, 2015 and no public comments were received. State agency comments provided in Appendix A, *Public Involvement*, were addressed in the Final REA.

PERMITS (REA, Appendix E)

Coastal Zone Management Act Consistency Determination

FINDING OF NO SIGNIFICANT IMPACT

Based on my review of the facts and the environmental analysis contained in the attached REA, and as summarized above, I find the proposed decision of the Air Force to implement the Preferred Alternative, will not have a significant impact on the human or natural environment; therefore, an environmental impact statement is not required. This analysis fulfills the requirements of the NEPA, the President's CEQ, and 32 CFR Part 989.

CRAIG P. JOHNSON, Colonel, USAF
Commander, 96th Civil Engineer Group

21 Aug 15
Date

TEST AREA C-74 COMPLEX RANGE ENVIRONMENTAL ASSESSMENT

FINAL

Submitted to:

AFMC 96 CEG/CEIE
Eglin Air Force Base, Florida 32542-5105

RCS 14-390, Revision 1

August 2015

PRINTED ON RECYCLED PAPER

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ACRONYMS, SYMBOLS, AND ABBREVIATIONS

96 CEG/CEIEA	96th Civil Engineer Group/Environmental Assets, Natural Resources Office
96 CEG/CZO	96th Civil Engineer Group/Restoration
96 RANSS/RNRS	96th Range Support Squadron/Range Systems Flight
96 TW	96th Test Wing
AFB	Air Force Base
AFCEC/CZO	Air Force Civil Engineer Center/Operations (Environmental Restoration)
AFCRC	Air Force Cambridge Research Center
AFMC	Air Force Materiel Command
AFX	a type of plastic bonded explosive
AOC	Area of Concern
APE	Area of Potential Effects
API	Armor Piercing Incendiary
ATV	all-terrain vehicles
AUP	Advanced Unitary Penetrator
BDU	Bomb Dummy Unit
BLU	Bomb Live Unit
C	candidate
CFR	Code of Federal Regulations
dBP	peak decibels
DoD	Department of Defense
DU	depleted uranium
E	endangered
EBD	Environmental Baseline Document
EESD	Eglin Enterprise Spatial Database
EFW	Electromagnetic Frequency Weapon
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FNAI	Florida Natural Areas Inventory
FPEA	*TA C-74 Complex Final Programmatic Environmental Assessment* (2002)
FWC	Florida Fish and Wildlife Conservation Commission
FY	fiscal year
GIS	geographic information system
GP	General Purpose
GPS	Global Positioning System
HEI	High Explosive Incendiary
HTVS	Hard Target Void Sensing
HTW	Hard Target Weapon
HVAR	High Velocity Air Rocket
JASSM	Joint Air-to-Surface Standoff Munition
JAST	Joint Air-to-Surface Target
KEMTF	Kinetic Energy Munitions Test Facility
lb	pound
MBTA	Migratory Bird Treaty Act
MK	Mark
MLRS	Multiple Launch Rocket System
mm	millimeter
MMTD	Miniaturized Munitions Technology Demonstration
NAAQS	National Ambient Air Quality Standards
NASA	National Aeronautics and Space Administration
NEPA	National Environmental Policy Act
NEW	Net Explosive Weight
NHPA	National Historic Preservation Act
NL	not listed

PBGs	potential breeding groups
PEA	Programmatic Environmental Assessment
PGU	Projectile Gun Unit
POI	Point of Interest
psi	pounds per square inch
RCW	red-cockaded woodpecker
REAs	Range Environmental Assessment
ROI	Region of Influence
SSC	species of special concern
T	threatened
TA	Test Area
TCPs	Traditional Cultural Properties
TP	Target Practice
USAF	United States Air Force
USC	United States Code
USFWS	United States Fish and Wildlife Service
WFPM	Wildland Fire Program Manager
WHD	Warhead

1. PURPOSE AND NEED FOR ACTION

Eglin Range Environmental Assessments (REAs) are conducted in accordance with the Council on Environmental Quality's National Environmental Policy Act (NEPA) regulations to analyze the potential environmental consequences associated with current and foreseeable military missions. The analysis also ensures compliance with U.S. Air Force policy and other applicable federal, state, and local environmental laws and regulations. This REA evaluates military missions on the Test Area (TA) C-74 Complex at Eglin Air Force Base (AFB).

1.1 INTRODUCTION

The Eglin Military Complex, located in the northwest Florida panhandle, is one of 19 component installations categorized as a Department of Defense (DoD) Major Range Test Facility Base. Eglin AFB is primarily situated among three counties: Santa Rosa County, Okaloosa County, and Walton County (Figure 1-1). The C-74 Complex is located in the eastern portion of the Eglin Range in Walton County, Florida, and is composed of three TAs: C-74, C-74L, and C-74A (Figure 1-2). Eglin AFB's primary function is to support research, development, test, and evaluation of conventional weapons and electronic systems. Eglin AFB also provides support for individual and joint training of operational units. TA C-74 makes up a portion of the Eglin Military Complex and supports test missions.

The test missions at the TA C-74 Complex include the Kinetic Energy Munitions Test Facility (KEMTF), gunnery ballistics testing, and static munitions testing. TA C-74 Complex missions are authorized, scheduled, and monitored by the 96th Test Wing (96 TW).

The 96 TW is the test and evaluation center for Air Force air-delivered weapons, navigation and guidance systems, Command and Control systems, and Air Force Special Operations Command systems. The Wing provides complete system life cycle development testing and evaluation for a variety of customers including Air Force Systems Program Offices, the Air Force Research Laboratory, logistics and product centers; major commands; other DoD services and U.S. government agencies (Department of Transportation, NASA, etc.); foreign military sales; and private industry.

Munitions and weapons systems tested on the C-74 Complex include high-explosive rockets, explosive charges, high-explosive projectiles, fuzes, and various size munitions. TA C-74A is used to analyze the internal combustion of munitions items by nondestructive (X-ray) or destructive (sectioning) test techniques and to provide a temporary storage location for test munitions. Additional information on TA C-74 Complex military missions, facilities, and infrastructure is presented in Appendix A.

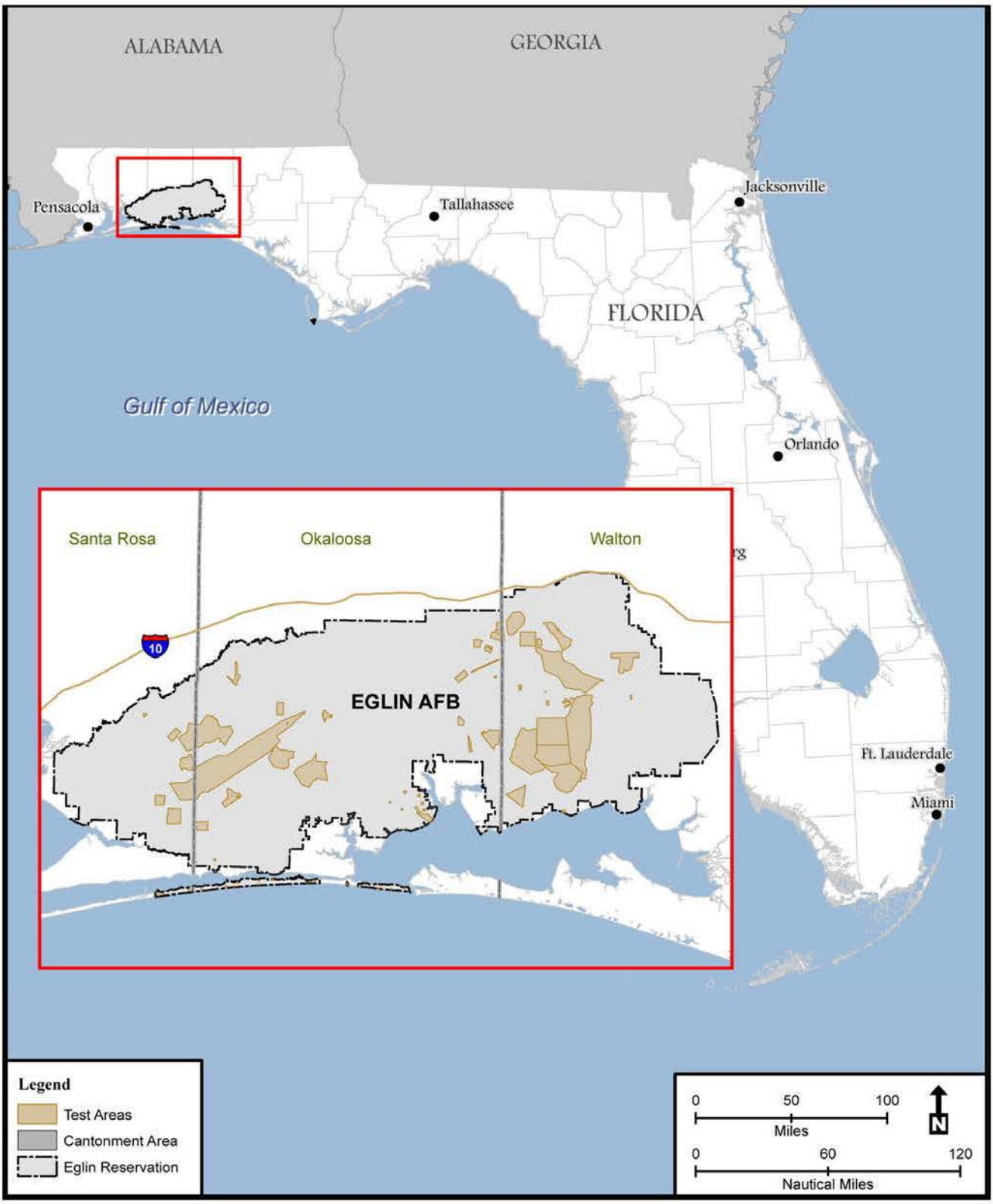

Figure 1-1. Test Area C-74 Complex Region

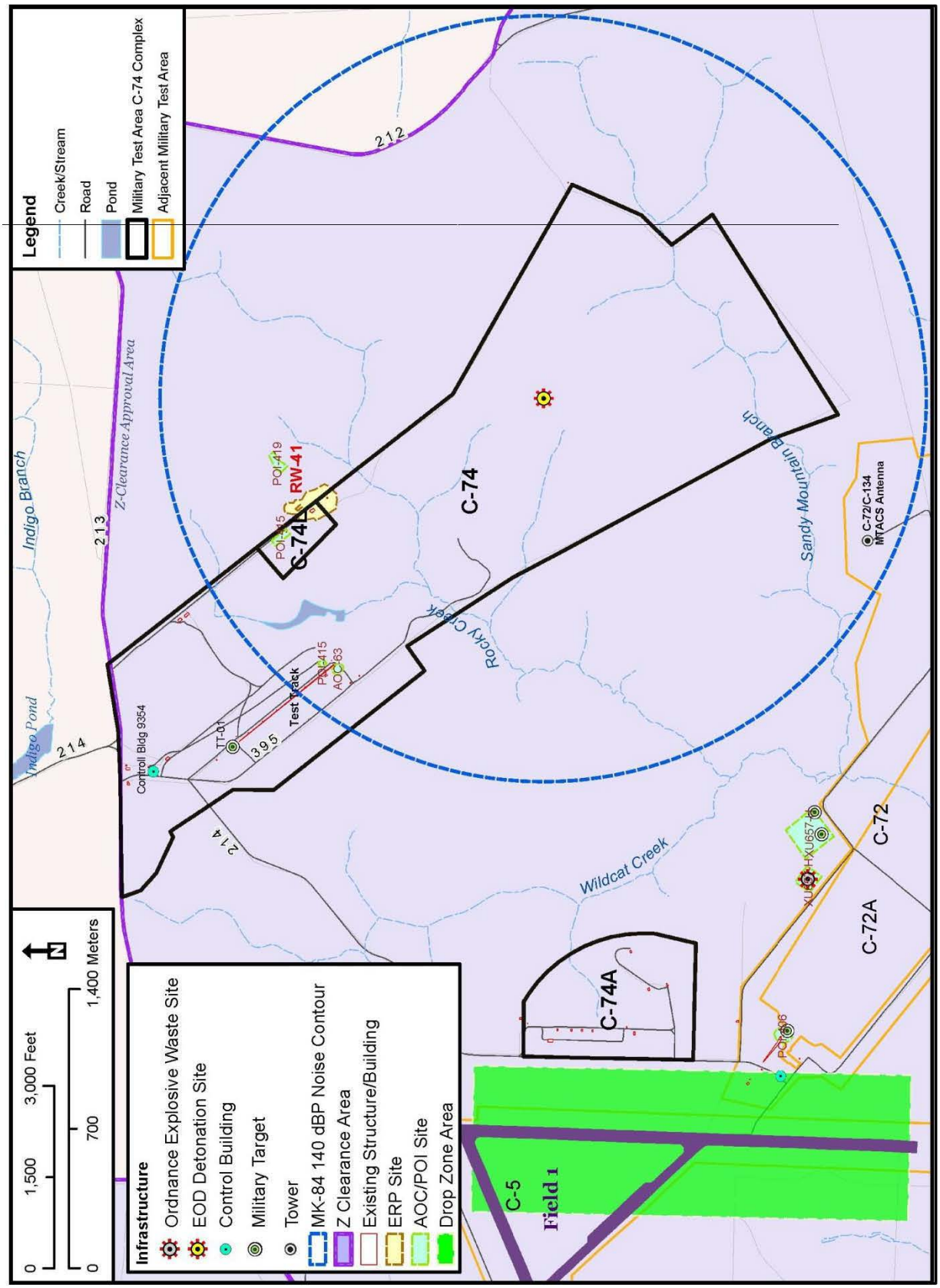

Figure 1-2. Test Area C-74 Complex

1.2 PROPOSED ACTION

Since 2009 most TA C-74 missions have decreased compared with the original analysis conducted in 2002 as reported in the *Test Area C-74 Complex, Final Programmatic Environmental Assessment* (U.S. Air Force, 2002a), although gun ballistics testing briefly increased following the publication of the 2002 REA. As it is desirable for the 96 TW to authorize for the TA C-74 Complex a level of mission activity that is based on potential maximum usage, the Proposed Action is to continue with the selected alternative from the 2002 REA plus an increase in gun ballistics testing, although such testing has only occurred in 2002–2003 (see Table 2-1 in Chapter 2) and is not anticipated to occur in the future at TA C-74 (Prescott, 2014; Thomas, 2014).

An item that was not previously captured in the 2002 REA or 2007 Environmental Baseline Document (EBD) is the on-site disposal of sled track items by EOD and this will be addressed in this REA. EOD disposal is not a test but rather a safety procedure conducted as needed. Additionally, the Proposed Action includes corrective actions to correct or repair mission-induced damage to TA natural resources. No future increases in mission expenditures or changes in mission activity for the TA C-74 Complex have been identified; thus, the Proposed Action does not include new types of missions (Thomas, 2014). Discussion of the Proposed Action and alternatives is presented in Chapter 2, *Description of Proposed Action and Alternatives*.

1.2.1 Purpose and Need for the Action

The purpose of and need for the action is to: (1) continue TA C-74 missions, (2) maintain NEPA compliance, and (3) update environmental analysis as identified in the *Test Area C-74 Complex Final Environmental Baseline Document* (U.S. Air Force, 2007).

1.2.2 Relevant Environmental Documentation

Relevant environmental documents to the TA C-74 Complex REA include:

- Test Area C-74 Environmental Baseline Document (U.S. Air Force, 2001)
- Test Area C-74 Programmatic Environmental Assessment (PEA) (U.S. Air Force, 2002a)
- Test Area C-74 Maintenance Plan (U.S. Air Force, 2005)
- Test Area C-74 Environmental Baseline Document (U.S. Air Force, 2007)
- Red-Cockaded Woodpecker Programmatic Biological Opinion Eglin Air Force Base, NE Gulf of Mexico, Walton, Okaloosa, Santa Rosa Counties, Florida (U.S. Fish and Wildlife Service [USFWS], 2013)
- Decommissioning Plan for C-74L, approved by the Nuclear Regulatory Commission (Federal Register, 2005) (Nuclear Regulatory Commission, 2005)
- AF Form 813s for actions on the TA C-74 Complex

1.3 SCOPE OF THE ENVIRONMENTAL REVIEW

The scope of the environmental review includes the region of influence pertinent to the potential environmental issues. The region of influence includes the TA C-74 Complex and surrounding areas of Eglin AFB and community potentially affected by missions. *Issues* are the environmental effects of the Proposed Action on surrounding natural and socioeconomic environments (e.g., resource problems, needs, benefits, or concerns).

An important consideration to evaluate TA C-74 environmental impact potentials is the transition in TA mission activities over the past few years. The KEMTF sled track operations are the primary TA C-74 mission capacity currently active, and no TA C-74L gunnery ballistic or TA C-74 static munitions testing were reported for fiscal years (FYs) 2011 through 2014.

Depleted uranium (DU) munition testing was conducted at TA C-74L from 1973 to September of 1978. Because of legacy Projectile Gun Unit (PGU)-14/B Armor Piercing Incendiary (API) round testing, TA C-74L has undergone several radiological abatement projects. The site was cleaned to residential levels and released for operation with land use controls in 2006. Weapons testing of other than DU munitions, continued until the TA C-74L gun was moved to TA C-64 in 2012 (Curry, 2014). In addition, TA C-74 arena non-DU gunnery testing has not been conducted since 2008 (Prescott, 2014). No future increases in mission expenditures or changes in mission activity for the TA C-74 Complex were identified (Thomas, 2014).

A previously unaddressed activity for this REA is the disposal of KEMTF items at the EOD detonation site on the southern portion of TA C-74 (Figure 1-3 and Figure A-3). Sled track items not expended during a mission event are immediately disposed at the site. A description of the site features and operations are presented in Appendix A. EOD disposal is not a test mission but rather a safety procedure conducted as needed.

1.3.1 Resource Areas Eliminated from Detailed Analysis

Soils

Since the 2002 TA C-74 Complex Final PEA (FPEA) (U.S. Air Force, 2002a), erosion control efforts on TA C-74 have been completed and have alleviated much of the test area soil erosion potential. Areas that were eroding previously have been recontoured and stabilized with native vegetation. Approximately 108 acres of TA C-74 lands damaged by soil erosion were treated between 2001 and 2012 (Williams, 2014) (Figure 1-4 and Figure A-6). Erosion damage included the Rocky Creek unpaved road stream crossing and stream slopes affected by roller drum chopping and the recovery of KEMTF mission expenditures. Current low-impact mission expenditure recovery methods for sensitive slopes and stream areas are discussed in Appendix A (see TA C-74 Munitions Testing Capabilities, Kinetic Energy Munitions Facility).

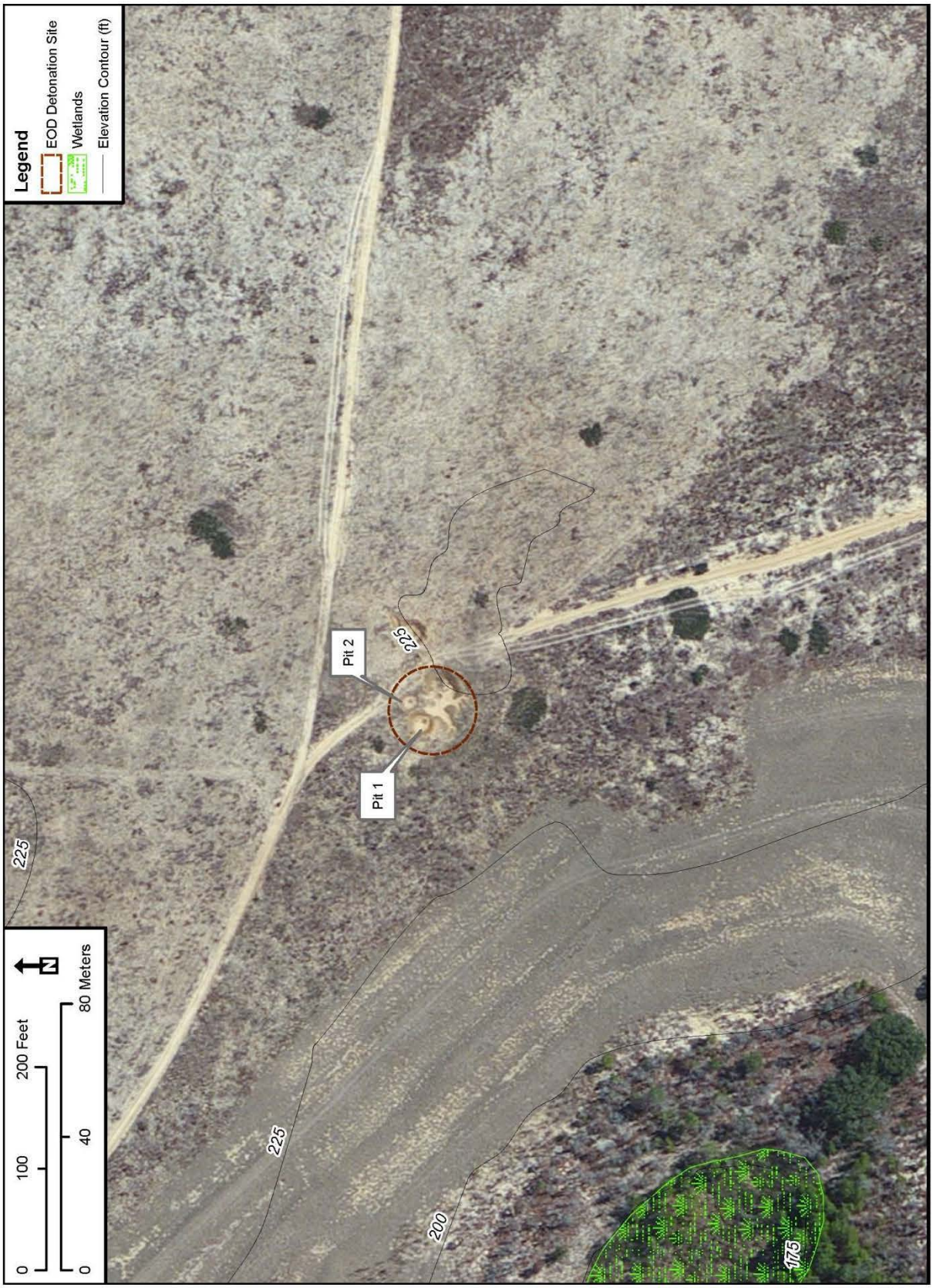

Figure 1-3. TA C-74 EOD Detonation Site

Figure 1-4. TA C-74 Pre- and Post-Construction Land Stabilization in Proximity to Rocky Creek

Soil stabilization measures included slope recontouring, revegetation, and installation of earthen berms and swales. The road-stream crossing impacting Rocky Creek was also retrofitted with a new culvert crossing structure, and the unpaved road approaches were stabilized with a geoweb-aggregate surface course. Occasional damage from projectile landings are repaired as needed. Test area vegetation is maintained by periodic low-disturbance bush hog mowing; high-disturbance roller drum chopping is no longer used (Section 3.2.5 and Appendix A). No soil erosion damage to slope areas was observed during a TA C-74 site visit in February 2014.

Road maintenance activities could lead to soil erosion and stream sedimentation and physical impacts to terrestrial species and habitat. However, the road system (Appendix A) downrange of the KEMTF sled track is used and maintained infrequently, and the likelihood of affecting individuals or their habitats is considered remote. If sighted, listed species and tortoise burrows would be avoided. Adherence to the unpaved road and soil erosion management practices presented in Chapter 5, *Management Practices*, would reduce the potential for impacts to listed species resulting from road maintenance activities.

During the test area site visit, damage to the crossing at Rocky Creek (Figure 1-1) and surface disturbance at the EOD site were documented (Appendix A). The damage to the road crossing surface course is a routine road maintenance issue that is readily stabilized using standard techniques. The isolated damage to the road at the crossing released gravel materials into the stream; no soil loss was observed. The road base is overlain with geosynthetic materials that prevent exposing subgrade soils to erosion. Although in need of repairs, the improvements to the Rocky Creek road crossing and approaches have significantly reduced sediment-induced impacts to Okaloosa darter habitats.

The crossing condition currently does not pose an imminent threat to Okaloosa darter stream water quality or habitats. The 2002 FPEA environmental analysis also identified no mission-induced adverse impacts of road maintenance on soil quality. Therefore, additional TA C-74 road maintenance analysis is excluded from this REA.

The 2002 FPEA also analyzed the potential impacts of calculated KEMTF test item thermal propellant degradation and detonations of munition explosives. The analysis found potential soil

concentrations of chemical materials to be well below threshold criteria for Eglin's surface soils and Florida soil cleanup goals for industrial applications for all proposed mission alternatives.

The TA C-74 Complex contains one Environmental Restoration Program (ERP) site (Area of Concern [AOC] 63/67) on TA C-74 and two ERP sites (Points of Interest [POIs] 415 and 419) on TA C-74L that have been closed and require no further action (see Figure A-1) (U.S. Air Force, 2007). Several soil radiological abatement projects were conducted at ERP site RW-41 on TA C-74L to clean the site to residential levels. No potential soil contamination issues were identified.

The two detonation pits at the EOD site (see Figure A-3) exhibited minor rill and gully erosion along the perimeter of each pit caused by surface drainage into the pits. The pits are located in a minor depression area of a gently sloping plateau. Based on site location and surface topography, soil erosion is likely to be limited to the perimeter area of each pit (see Figure A-4). The areas surrounding the site were naturally vegetated and undisturbed. Considering that all KEMTF live warhead detonations are single item events that occur 10 to 12 times per year and that no drainage connection with or potential for EOD site-induced disturbance of off-site areas was identified, no additional analysis is required.

Based on observed TA C-74 slope stabilization treatments, minimal roadway maintenance requirements, adoption of low-impact mission expenditure recovery procedures for sensitive slope and stream areas, and previous analysis for potential soil contamination, soils are excluded as an issue for this REA.

Water Resources

Water resources are generally categorized as surface water and groundwater features. Surface waters typically include rivers, streams, bays, springs, lakes and ponds, and other wetlands. Groundwater includes the subsurface geohydrologic resources generally described as water tables and aquifers. Potential TA C-74 water resource issues include human-induced sedimentation caused by soil erosion and water contamination caused by munition expenditure chemical materials.

The Rocky Creek riparian zone is approximately 168 meters (550 feet) to the east-southeast of the southern end of the sled track (Figure 1-2). Since expended KEMTF rocket propellants and EOD munition detonations undergo complete thermal combustion and explosive degradation during mission events, there are likely no remnant propellant or explosive materials following each event. The topography of the sled track and EOD detonation areas is relatively flat to gently sloping with grassy cover of 90 percent and greater. These factors inhibit excessive and channelized flow of stormwater runoff and the active erosion and pollutant transport. As a result, no impacts to groundwater or surface water resources were identified resulting from chemical materials associated with sled track operations (U.S. Air Force, 2002a).

Increases in gunnery ballistics (small arms and guns) expendables exceeded approved levels in the 2002 FPEA; however, the gun was removed from TA C-74L in 2012 and gunnery testing has not been conducted at TA C-74 since 2008. Item recovery response procedures and soil stabilization improvements have further reduced potential impacts to water resources associated

with the Proposed Action. Therefore, water resources are not carried forward as an issue for this REA.

Hazardous Materials and Waste and Debris

Liquid, solid, or gaseous substances are released into the environment as a result of mission activities; these include compounds that can produce a chemical change or have a toxic effect on an environmental receptor. The TA C-74 FPEA (U.S. Air Force, 2002a) determined that a 200 percent increase in mission activities would result in no change in location or types of chemicals released into the environment. Mission-specific calculations determined that cumulative air emissions and soil concentrations were much less than the selected threshold criteria. Chemical exposure doses were estimated to be lower than suggested toxicity exposure criteria (U.S. Air Force, 2007).

TA C-74 increases in gunnery ballistics expenditures in FY 2002 and 2003 cumulatively exceeded approved levels identified in the 2002 FPEA; in the following years, expenditures were within approved levels. Based on 2002 FPEA and 2007 EBD analyses, the estimated level of chemical material byproducts would have been well below threshold levels and the resulting environmental impacts nonsignificant (U.S. Air Force, 2002a and 2007). In addition, the TA C-74L gunnery ballistics testing impact area downrange of the gun placement was cleaned to residential levels and released for operation with land use controls in 2006. The gun was also removed from TA C-74L in 2012 (Curry, 2014). Therefore, hazardous materials and wastes are excluded as an issue for this REA.

Range debris includes the physical materials deposited on the surface of terrestrial or aquatic environments during mission activities. Currently, munitions debris is recovered and/or removed from the ranges for the purpose of storage, reclamation, treatment, and disposal as solid waste. Munitions that are accelerated on the KEMTF and propelled downrange are carefully tracked, retrieved, and analyzed. Since the munitions being tested are cleared after each mission, the annual range clearance requirement is incrementally accomplished throughout the year, rather than at one time during the year. These practices are necessary to comply with Air Force Instruction (AFI) 13-212, which requires the range to be cleared of munitions debris on a regular basis. Therefore, debris is not carried forward as an issue for this REA.

Land Use

Land use generally refers to human management and use of land. For the TA C-74 Complex, land use is designated for military mission testing events. No change to current land use is expected; therefore, land use is excluded from further analysis. Potential restricted access to recreational and natural resource management activities associated with area closures during some testing missions is treated as a restricted access issue and addressed below under "Safety and Restricted Access."

Air Quality

Emissions released during mission activities are well within the National Ambient Air Quality Standards (NAAQS) and make up less than 0.03 percent of the total Walton County emissions

(U.S. Air Force, 2007). Thus, air quality is not carried forward as an issue to be analyzed in detail.

Socioeconomics

Previous analysis of socioeconomic impacts from TA C-74 missions is still relevant given the similarity in mission levels (U.S. Air Force, 2007). Adverse socioeconomic impacts are not anticipated because children and low-income and minorities persons are located over 10 miles from the test area and would not be disproportionately affected by missions. Therefore, socioeconomics are excluded as an issue for this REA.

Noise (Human Impacts)

Previous analysis concluded TA C-74 missions would potentially result in noise complaints from the community, though neither impacts to health or other significant impacts would occur. The analysis looks at changes in population and development since 2002 and estimates increase in population exposed to noise levels that some may consider annoying. An item that was not previously captured in the 2002 REA or 2007 EBD is the on-site disposal of KEMTF munitions by EOD. The disposal activity is not a test mission but rather a safety procedure conducted by EOD as needed.

Considering the proximity of the EOD site to the KEMTF area and duplication of munitions expended the potential noise impacts of EOD site detonations to surrounding community would mirror those for previously evaluated KEMTF operations (U.S. Air Force, 2002a and 2007). Therefore, the potential impacts of noise on surrounding communities are excluded from this REA. However, the potential impacts of EOD detonation noise on biological resources are addressed in this REA.

Safety and Restricted Access

Previous analysis identified restricted access to range roads, test areas, airspace, and recreation management units due to the safety footprints of large-scale live munition detonations on TA C-74 (U.S. Air Force, 2002a and 2007). Because the activity occurred infrequently and for short periods of time, the analysis concluded there would be no impacts to recreational users. Eglin AFB manages safety concerns through the observance of policies and procedures designed to minimize incidents during testing, training, and range maintenance. Thus, safety and restricted access are excluded as an issue for this REA.

1.3.2 Resource Areas Identified for Detailed Analysis

Biological Resources

The potential for significant habitat alteration from munitions landing near or in shallow darter streams was addressed in previous analyses and resolved through management practices. The management practices included soil erosion control measures to protect federally listed Okaloosa darter creeks. Control of sedimentation in Okaloosa darter streams has been successful. The analysis will capture the ongoing erosion control measures relative to darter stream protection

with the understanding that an informal consultation with the USFWS would be required for this REA update.

The potential impacts of grassland/shrubland vegetation maintenance on biological resources in Eglin test areas have been previously evaluated. Mowing in test areas was found to have minimal impacts on individual species and their habitats (U.S. Air Force, 1999; 2002b). In some instances, maintaining grassland-shrubland associations to early stages of succession through mowing and controlled burns creates quality habitats for species such as the gopher tortoise and burrowing owl.

The potential higher concentration of burrows associated with high-quality open grassland-shrubland habitats in test areas may avert direct physical impacts. These burrows provide refuge for species such as the eastern indigo snake during mowing. Also, the maintenance practice with the greatest level of ground disturbance, roller drum chopping, was discontinued on TA C-74 in the 1990s (Prescott, 2014) (Appendix A). No sensitive slope soil erosion damage was observed during a site visit in February 2014. Adherence to the vegetation maintenance practices presented in Chapter 5, *Management Practices*, would also reduce the potential for impacts to listed species. Since additional analysis is not required, vegetation maintenance impacts on TA C-74 biological resources are excluded from this REA.

Previous REA analysis did not examine habitat alteration from wildland fires initiated on the test area, a potential issue for the federally protected red-cockaded woodpecker (RCW). As of 2013 all potential wildland fire impacts for the entire base are now addressed in a Programmatic Biological Opinion for the RCW. The findings of this biological opinion as they apply to TA C-74 will be summarized and incorporated by reference into the analysis of the TA C-74 REA (USFWS, 2013).

Potential wildlife impacts of noise associated with the TA C-74 EOD detonation site have not been previously analyzed. Noise produced during KEMTF operations and EOD munition detonations may stress some wildlife species or cause hearing loss or damage. New information and analysis methods have become available since the previous analysis, particularly for the RCW. Analysis will focus on applying the best available science to evaluate noise impacts on RCWs.

Cultural Resources

Cultural resources consist of prehistoric and historic sites, structures, artifacts, and any other physical or traditional evidence of human activity considered relevant to a particular culture or community for scientific, traditional, religious, or other reasons. . Since the publication of the 2002 REA, three archaeological sites have been identified, two prehistoric sites and one site of unknown origin.

Analysis will evaluate the potential impacts of the downrange retrieval of KEMTF sled track test items and test area vegetation maintenance ground disturbances on TA C-74 archaeological sites. Potential impacts of vegetation maintenance bush hogging practices on cultural resources have not been previously evaluated and are included in this analysis.

1.4 FEDERAL PERMITS, LICENSES, AND ENTITLEMENTS

An Endangered Species Act (ESA) Section 7 informal consultation with the USFWS regarding impacts to federally listed species, primarily the Okaloosa darter, is required for future TA C-74 Complex testing operations. Consultation with the USFWS would establish appropriate avoidance and minimization measures, as well as terms and conditions, to minimize impacts to threatened and endangered species. The Biological Assessment and USFWS concurrence will be included in the Final REA (Appendix D, *Public Involvement and Agency Correspondence*). A Programmatic Biological Opinion for the RCW is already in place and is referenced in the analysis (USFWS, 2013).

Some components of this action would take place within or otherwise may affect the jurisdictional concerns of the Florida Department of Environmental Protection and, therefore, would require a consistency determination with respect to Florida's Coastal Zone Management Plan under the Federal Coastal Zone Management Act. A summary of relevant environmental laws, regulations, and policies is presented in Appendix B.

2. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

2.1 INTRODUCTION

This section introduces the alternatives evaluated for potential environmental impacts in this REA for the TA C-74 Complex. Alternatives are proposed activities and combinations of activities designed to maximize mission support capabilities while maintaining compliance with environmental requirements. The proposed alternatives, which are analyzed in this REA, are:

- No Action Alternative: No change from the 2002 REA Preferred Alternative
- Alternative 1: Authorize Current Baseline Level of Activity (FY2009–2013)

A brief description of each alternative is provided in the following section.

2.2 ALTERNATIVES

2.2.1 No Action Alternative

The No Action Alternative continues the authorization of the level of activity defined as the Preferred Alternative from the previous TA C-74 Complex PEA (U.S. Air Force, 2002a). Table 2-1 depicts the level of activity for the major mission activities at TA C-74 for the No Action Alternative and Alternative 1. The types of expendables shown in Table 2-2 are typical of munitions in the general categories authorized for use: sled track operations, static test detonations, and gunnery ballistics testing (Table 2-1). The munitions shown in Table 2-2 are actual expendables from tests conducted on the TA C-74 Complex and are typical or representative examples of munition types for each category. Future expendables are expected to be similar but may not be exactly alike. The No Action Alternative also captures the increase in gunnery ballistics testing, which occurred in 2002–2003 (U.S. Air Force, 2007).

Table 2-1. TA C-74 Alternatives Mission Number of Events and Expenditures

Mission Activity	No Action Alternative		Alternative 1	
	Number of Events	Number of Expenditures	Number of Events	Number of Expenditures
KEMTF Sled Track Operations				
Rocket Motors	50	450	20	360
Inert Munitions		30		75
Live Munitions		20		20
Static Munitions Testing (Arena Test Area)				
Large Munitions (>50 lb NEW)	20	20	0	0
Small Munitions (<50 lb NEW)		15		0
Other (1 lb or less NEW)		140		0
Gunnery Ballistics Testing				
TA C-74 Arena Test Area Inert munitions	30	30	0	0
TA C-74L – Gunnery	60	15,000	0	0

KEMTF = Kinetic Energy Munitions Test Facility; lb = pound; NEW = net explosive weight; TA = Test Area

Table 2-2. Typical Types of Expenditures by TA C-74 Mission Activity

KEMTF Sled Track Operations		
Rocket Motors	HVAR rocket motor	Zuni rocket motor
	Genie rocket motor	MLRS pupfish motor
Inert Munitions	MLRS	BLU-109 Penetrator 2000 lb
	BLU-109 X/B W/Inert AFX-757	BLU-113 A(D-1)/B
	BLU-109a/B live load	Bomb practice BLU-109(D-1)/B
	Mk-82	Bomb, BLU-122/B, Inert
	I-1000	Bomb, guided, general
	JAST WHD	Bomb, practice
	JASSM WHD	Fin assembly, bomb
	Nose plug bomb 750lb M117	I-500 bomb AFX-757 Inert -201
	Mk-82	Inert, BLU-129/B, PN X20107104
Live Munitions	MMTD WHD	BLU-109 penetrator 2,000 ls AFX-757
	BLU-109C/B AFX-757 penetrator	BLU-109 with embedded fuze well
	Bomb, BLU-109/B	Bomb, GP BLU-113/A
	AUP WHD	Bomb, GP BLU-129/b 500 lb
	HTW 1,000-pound bomb	JASSM WHD
Static Munitions Testing		
Live Munitions	JASSM 920-scale	Colt 45 WHD
	JASSM 1/3-scale	Mk-84
Miscellaneous	C-4, 1 pound	C-4, 0.125 lb
Gunnery Ballistics Testing		
Inert Munitions	JASSM 920-scale (inert)	JASSM 1/3-scale (inert)
Gunnery	30-mm HEI (PGU-13/B)	25-mm HEI (PGU/38)
	30-mm TP (PGU-15/B)	25-mm TP (PGU-23/U)
	20-mm HEI	105 mm
	20-mm TP	

AFX = a type of plastic bonded explosive; AUP = Advanced Unitary Penetrator; BLU = Bomb Live Unit; HVAR = High Velocity Air Rocket; GP = General Purpose; HEI = High Explosive Incendiary; HTW = Hard Target Weapon; JASSM = Joint Air-to-Surface Standoff Munition; JAST = Joint Air-to-Surface Target; KEMTF = Kinetic Energy Munitions Test Facility; lb = pound; MK = Mark; MLRS = Multiple Launch Rocket System; mm = millimeter; MMTD = Miniaturized Munitions Technology Demonstration; PGU = Projectile Gun Unit; TP = Target Practice; WHD = Warhead

Dud or classified items may require EOD disposal. The EOD explosive charges are captured in Table 2-1 as static munitions of 1 pound or less. The EOD disposal site is located adjacent to an unimproved road on a terrace plateau in the southwestern portion of TA C-74. It consists of two pits where item detonations are conducted (see Figure 1-3, Figure A-3, and Figure A-4).

Live warheads and other munitions not detonated during sled track testing are taken to the EOD site for single-item demolition detonation. These items, captured as sled track testing expendables in Table 2-1, are not stored but detonated following a test. The item and number of the 20 live munitions disposed at the EOD detonation site between December 2011 and September 2014 include Hard Target Void Sensing (HTVS) BLU-109 (10), Electromagnetic Frequency Weapon (EFW) BLU-109 (3), HTVS DT1 BLU-109 (1), HTVS BLU-113 (4), BLU-113 (1), and Joint Air-to-Surface Standoff Munition (JASSM) (1).

Munition demolition debris is recovered following each event. All demolition activities are conducted by 96th Civil Engineer Squadron, Explosive Ordnance Disposal Flight. Of the expendables listed under sled track operations in Table 2-1, 15 large bombs did not detonate as planned and were disposed of by EOD. The No Action Alternative also carries forward from

previous NEPA analysis corrective actions to correct or repair mission-induced damage to test area natural resources. These corrective actions are listed in Chapter 5, *Management Practices*.

2.2.2 Alternative 1: Authorize Current Baseline (FY2009 – 2013) Level of Activity

This alternative would authorize the current level of activity as defined by the TA C-74 mission expenditures for FY 2009 through FY 2013, referred to here as the current baseline. During the current baseline, missions decreased over the level analyzed for the No Action Alternative, which is a continuation of the 2002 Preferred Alternative activity level. During the current baseline period, sled track missions decreased and there were no gunnery ballistic or static testing missions. Alternative 1 is not the Preferred Alternative as it authorizes a lesser amount of mission activity and may not be flexible enough to accommodate surges in testing. Alternative 1 includes corrective actions to correct or repair mission-induced damage to test area natural resources.

2.3 IMPACT SUMMARY

Potential impacts of each alternative are summarized in Table 2-3.

Table 2-3. Comparison of Potential Environmental Impacts by Resource Area

Resource Area	No Action Alternative	Alternative 1
Biological Resources	*EOD Detonation Site Operations*: Noise impacts would likely be limited to startling responses from individual birds or animals. No adverse impacts to sensitive species habitats or breeding and nesting success were identified. TA C-74 Complex biological resource species and habitat impacts could occur but are considered to be nonsignificant. *Wildland Fires*: Fires potentially ignited by mission-related activities could affect habitats within and in proximity to TA C-74, and wildfire suppression activities could impact wildlife or cause erosion; however, no adverse impacts to sensitive species or their habitats are anticipated and are considered nonsignificant. In most cases, burn events would likely benefit sensitive species habitat conditions.	Resource impacts would be similar to those under the No Action Alternative.
Cultural Resources	*KEMTF Expended Item Retrieval*: Retrieving munition items along sloped areas with cables could impact near-surface archaeological sites. Impacts associated with items that "plow" the surface through sites that are considered eligible for listing on the National Register of Historic Places during recovery operations would be considered significant. *Open Grassland-Shrubland Mechanical Vegetation Maintenance*: Soil surface damage caused mowing equipment used to bush hog TA C-74 open grassland-shrubland areas could impact near-surface archaeological sites. Impacts to eligible sites would be considered significant. *EOD Detonation Site Operations*: Munition detonation and recovery activities would not adversely impact cultural resources and are considered to be nonsignificant. Adverse effects to known TA C-74 Complex cultural resources are not anticipated. Test area activities should be restricted from cultural resource locations to avoid potential impacts.	

EOD = Explosive Ordnance Disposal; TA = Test Area

2.4 PREFERRED ALTERNATIVE

The Preferred Alternative is the No Action Alternative, which is a continuation of the approved level of activity from the 2002 FPEA. Additionally, this alternative captures increases in gunnery ballistic testing to account for intermittent spikes in this type of activity and on-site KEMTF item detonations. The No Action Alternative authorizes a higher level of activity than what has been observed over the last five years; thus, it is conservative with regard to maintaining an approved level of missions that is not likely to be exceeded.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 BIOLOGICAL RESOURCES

3.1.1 Definition of the Resource

Biological resources are the terrestrial and aquatic plants and animals (native and introduced) and their habitats within the TA C-74 Complex boundary and its region of influence (ROI). The ROI for some biological resources extends into off-site areas in vicinity to the test area. Special consideration is given to special status species and habitats protected and/or listed under Endangered Species Act of 1973 (i.e., the ESA), the Migratory Bird Treaty Act (MBTA), or by the state of Florida (see Appendix B). Certain species and habitats may also be considered if they occur proximate to or downstream of the test area.

3.1.2 Regulatory Environment

The ESA of 1973 (16 USC 1531 to 1544; 1997–Supp) was enacted to provide for the conservation of endangered and threatened species and their habitats. Air Force Policy Directive 32-70 directs the implementation of the ESA. Certain federal activities may require an ESA Section 7 consultation with the USFWS and/or the National Marine Fisheries Service if impacts to federally listed species are possible.

AFI 32-7064 details how to manage natural resources to comply with federal, state, and local laws and regulations. This AFI calls for the protection and conservation of state-listed species when not in direct conflict with the military mission. Eglin AFB applies for appropriate permits for actions that may affect state-listed species (such as monitoring and handling) and also cooperates with the Florida Fish and Wildlife Conservation Commission (FWC) to further the goals of the Florida State Wildlife Conservation Strategy.

Migratory birds are protected under the Migratory Bird Treaty Act (16 USC 703-712; 1997-Supp) and Executive Order 13186. A migratory bird is defined by the USFWS as any species or family of birds that lives, reproduces, or migrates within or across international borders at some point during their annual life cycle. Federal agencies are to integrate bird conservation principles, measures, and practices into agency activities and are to avoid or minimize adverse impacts on migratory bird resources. Also, federal agencies must provide notice to the USFWS in advance of conducting an action that is intended to take migratory birds.

3.1.3 Analysis Methodology

Analysis of biological resources considered potential impacts to habitats, vegetation communities, and wildlife, including sensitive species. The plant and animal resources potentially affected are identified based on habitat type and on previous documented occurrence. The analyses included an assessment of potential impacts resulting TA C-74 wildland fires and KEMTF item detonations at the EOD site (see Figure 1-3).

Projected conditions were compared with baseline conditions, and a determination was made as to whether impacts would be adverse. Direct and indirect impacts are included in the analyses. An adverse impact would degrade habitat quality or diminish species health. A significant adverse impact would be one that is likely to jeopardize the continued existence of a species or result in an overall decrease in population diversity, abundance, or fitness.

3.1.4 Affected Environment

This section describes the watersheds, habitats, and wildlife of the TA C-74 Complex. Eglin AFB uses a classification system based on ecological associations that were developed based on floral, faunal, and geophysical characteristics. The *Integrated Natural Resources Plan*, *Eglin AFB* (U.S. Air Force, 2013) and the *Environmental Baseline Study Resource Appendices* (U.S. Air Force, 2003) describe these natural resource features.

Habitats

Primary ecological associations that occur within and adjacent to the TA C-74 Complex include the landscaped-urban, open grassland-shrublands, sandhills, and wetland-riparian areas (Figure 3-1 and Table 3-1). TA C-74 includes three watersheds including Rocky Creek, Sandy Mountain Branch (tributary of Rocky Creek), and Wildcat Creek (Figure 3-1). Rocky Creek is the larger of the two stream systems and bisects TA C-74. Sandy Mountain Branch is the smaller stream and occurs on the southern edge of the test area. These watersheds are within the Choctawhatchee Bay Basin. No outstanding Florida waters or aquatic preserves occur within or in proximity to the test area.

Table 3-1. TA C-74 Complex Habitats

Ecological Association	TA C-74 Complex (acres)			Total (acres)
	C-74	C-74-L	C-74A	
Landscaped-Urban	116	21	4	141
Open Grassland – Shrubland	748	0	10	758
Sandhills	138	94	3	235
Wetland-Riparian Areas	52	1	0	53
Total	1054	116	17	1187

Source GIS File: Eglin Air Force Base EESD.land_cover_area_FNAI feature class
EESD = Eglin Enterprise Spatial Database; FNAI = Florida Natural Areas Inventory; TA = Test Area

Landscaped-Urban Association

These are heavily disturbed areas that are used for facilities and certain mission operation areas. Depending on the function and level of disturbance, vegetation may or may not occur or be maintained in these locations. As an example, the target decommissioning area along the western edge of C-74 is highly disturbed and contains large areas of mostly bare ground. A portion of C-74L has also been classified as landscaped-urban because of the extensive soil removal and replacement activities at ERP site RW-41 (Figure 3-1). In some areas, grass has been planted and is mowed as needed.

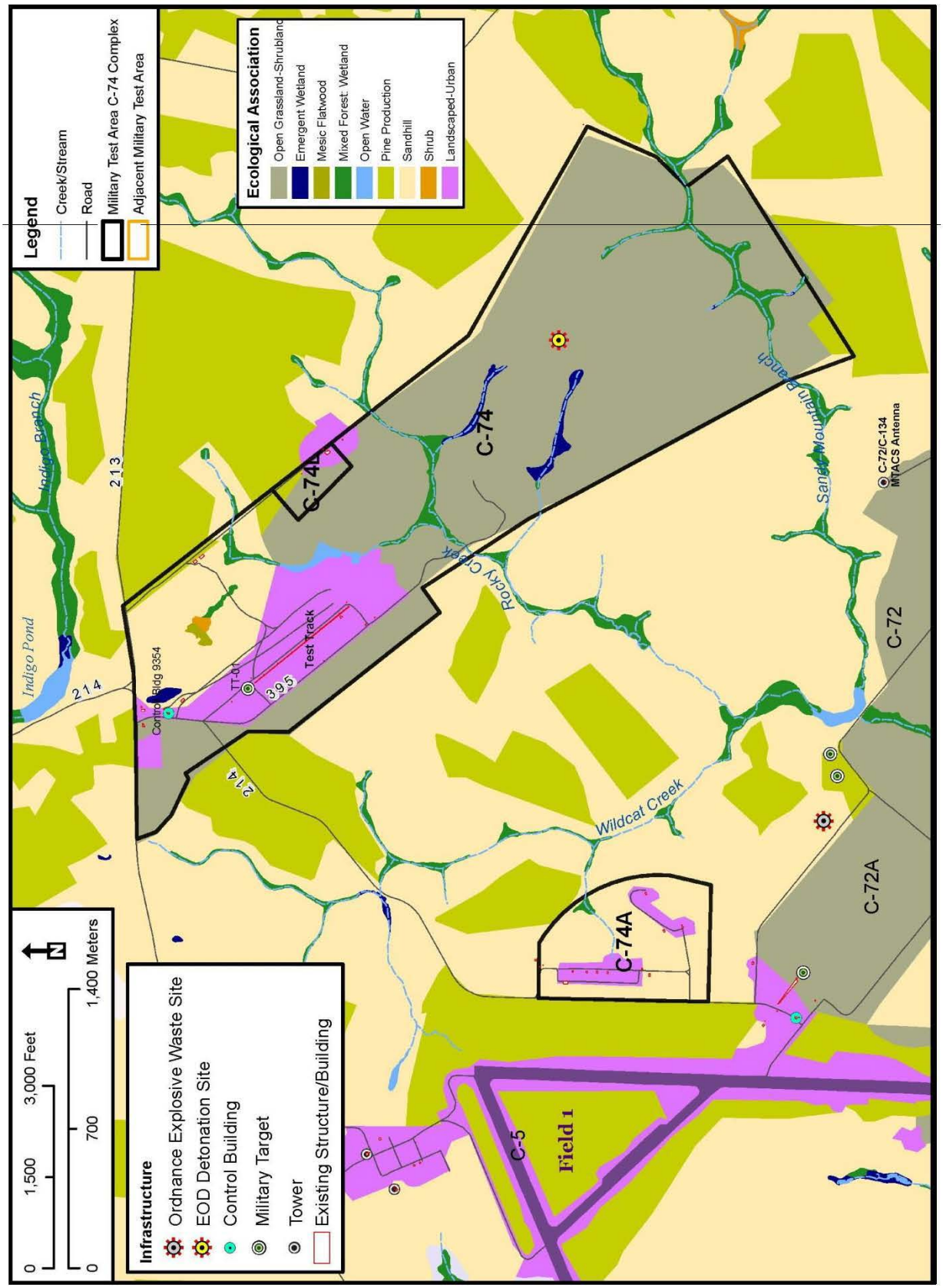

Figure 3-1. TA C-74 Complex Ecological Associations

Open Grassland-Shrubland Association

The primary TA C-74 terrestrial habitat is the open grassland-shrubland vegetation community, which is the product of vegetation maintenance (Figure 3-1 and Figure 3-2). Native grasses include switchgrass, broomsedge, big bluestems, yellow Indian grass, purple lovegrass, wooly pancium, and a diversity of forbs. A variety of scrub oak species (turkey oak, bluejack oak, live oak, and red oak), magnolias, and persimmon inhabit the midstory. Seedlings and saplings of the oak and persimmon form a blanket of ground cover on the test area. No sensitive plant species are known to occur with the test area grassland-shrubland community.

Figure 3-2. TA C-74 Open Grassland-Shrubland Vegetation

Vegetation control on TA C-74 is necessary to suppress the density and growth of native vegetation, particularly woody species. Controlling vegetation is mission-essential to observe where test items land immediately after the test and to aid in rapid recovery of munitions downrange. When vegetation maintenance activities are not conducted, plants grow to heights and densities that interfere with the ability to conduct test and training missions, impede the operation of ground-based instrumentation, block line-of-sight requirements, and complicate munitions debris recovery.

Currently vegetation on the test area is maintained with bush hogging on the upland portions once every 12 to 18 months. The frequency of treatment has been effective for controlling the vegetation. Fire has contributed to maintaining vegetation on TA C-74 with most of the test area

having been burned at least once since 1998. Within and leading up to the fenced compound on TA C-74A, the grass is kept mowed. Outside of the fenced compound, the vegetation is mowed around the buildings but elsewhere is allowed to grow. The vegetation on TA C-74L is maintained much the same way—mowed around buildings and allowed to grow elsewhere on the test area (U.S. Air Force, 2005; Prescott, 2014).

Sandhills Association

Around the edges of the test area, the vegetation community blends into habitat dominated by the sandhills ecological association (Figure 3-1 and Figure 3-3). It is characterized by rolling sandhill ridges dissected by streams and includes pockets of habitat ranging from steeply sloped to flat and xeric (dry) to mesic (moist). Lower lying areas contain loamy sands, sandy loams, clay loams, and muck soils. Dominant trees include stands of longleaf pine and sand pine, along with oaks and magnolia. Low shrubs are an important group and include saw palmetto, persimmon, dwarf huckleberry, gopher apple, and various oaks. Vegetation surrounding ponds and the shoreline of creeks can include grasses and herbs or a dense shrub thicket. Typical plants include panicums, rushes, arrowheads, yellow-eyed grass, meadowbeauty, and spike-rush. Floating plants such as water lilies can cover much of the water surface of quiet waters (U.S. Air Force, 2003).

Figure 3-3. TA C-74 Sandhills and Open Grassland-Shrubland Intersect

Wetland-Riparian Areas

There are approximately 54 acres of TA C-74 Complex wetlands that include the flat, poorly drained soils that occur in creek beds and along the margins of streams and the man-made ponds south of the KEMTF area. A wetland ecosystem associated with Indigo Branch is present within 1 kilometer of TA C-74 (Figure 3-1). Riparian zones are biologically diverse transition areas between wetland and terrestrial habitats. Vegetation and soils act as water filters, intercepting surface water runoff and storing floodwaters during floods.

Generally, the width of riparian areas adjacent to test area streams and ponds has been determined by the extent of soil wetness. Historically, roller drum choppers and bush hogs, used to maintenance open grassland-shrublands, were operated as close as possible along the margins of streams. In some cases, the long-term effects on wetland ecosystems have been dramatic. As an example, years of unencumbered roadscape- and landscape-induced sedimentation into Rocky Creek has resulted in relatively wide, shallow braided stream channels that support the growth of in-stream vegetation (Figure 3-4). Stream habitats have been altered by smothering from introduced soil sediments. Recovery of this TA C-74 headwater stream channel to predisturbance conditions will likely take decades. The Rocky Creek unpaved road crossing and

stream sideslope stabilization have reduced sediment generation and stream loading (see Section 1.3.1 and Figure 1-4).

Figure 3-4. TA C-74 Rocky Creek Stream Sedimentation and Vegetation

A dam was constructed along a tributary of this creek many years ago, creating a pond southeast of the KEMTF sled track (Figure 3-5). There has been no known mission-related activity associated with the pond area (Prescott, 2014). The pond retention structure has altered stream hydrology and acts as a biological barrier preventing Okaloosa darter access to stream habitats.

Sensitive Plants and Habitats

TA C-74 Complex sensitive habitats include wetland-riparian areas and high-quality natural communities (Figure 3-5). Seven state-listed plants that occur or are likely to occur within or in proximity to the test area are presented in Table 3-2. An endangered species is defined as one that is in danger of extinction throughout all or a significant portion of its range. A threatened species is any species that is likely to become endangered in the future throughout all or a significant portion of its range due to loss of habitat, anthropogenic effects, or other causes.

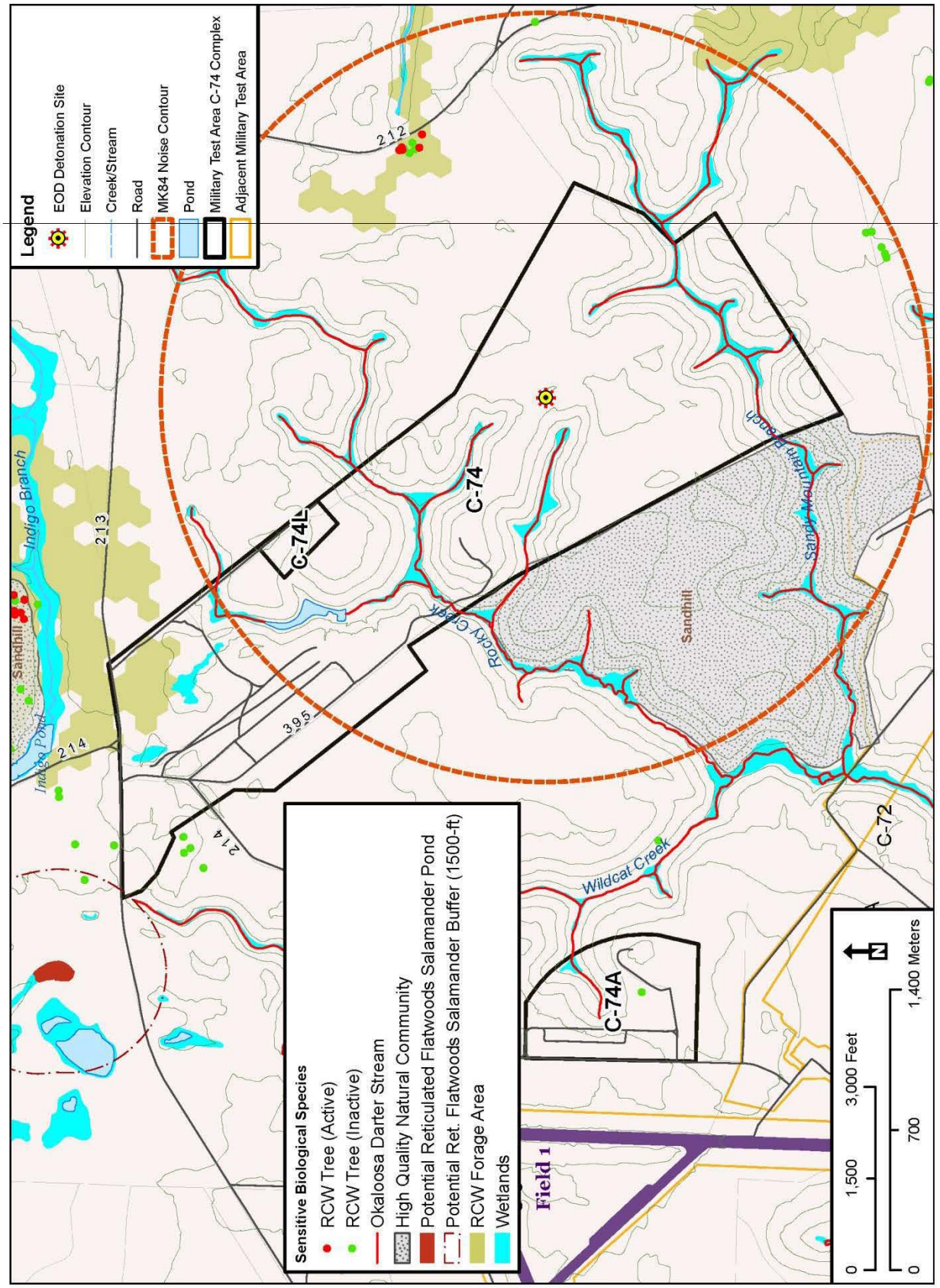

Figure 3-5. TA C-74 Complex Sensitive Habitats and Species

Table 3-2. State-Listed Plants that Occur or May Occur on the TA C-74 Complex

Protected Species (state listing)	Scientific Name	Habitats
Panhandle Lily (E)	*Lilium iridollae*	Streambanks, baygalls, and shrub-bogs
Sweet Pitcher Plant (T)	*Sarracenia rubra*	
Bog Buttons (T)	*Lachnocaulon digynum*	Wet margins of ponds and streams
Naked-Stemmed Panicgrass (T)	*Panicum nudicaule*	Seepage slopes and bogs
Pineland Wild Indigo (T)	*Baptisia calycosa* var. *villosa*	Sandhills
Pineland Hoary Pea (T)	*Tephrosia mohrii*	
Baltzells Sedge (T)	*Carex baltzellii*	Moist, shaded undisturbed slopes of steephead ravines

E = endangered; T = threatened

Specific areas within Eglin AFB are ecologically unique, due to their status as high-quality examples of natural communities or the presence of rare species. The Florida Natural Areas Inventory identified these areas through a project funded by the DoD Legacy Resource Management Program. They are termed "high-quality natural communities," "significant botanical sites," and "outstanding natural areas." High-quality natural communities are distinguished by the uniqueness of the community, ecological condition, species diversity, and presence of rare species. There are approximately 482 acres of high-quality natural communities along the southwestern boundary of TA C-74 (Figure 3-5).

Wildlife

Proposed Air Force projects that may affect federally listed species, species proposed for federal listing, and critical habitat for protected species are subject to Section 7 of the ESA. The nine federally listed and state-listed animal species known to occur or are likely to occur within or in the vicinity of the TA C-74 Complex are presented in Table 3-3, sensitive habitat areas are shown in Figure 3-5, and sensitive wildlife species are described in Appendix C. Although not federally or state listed as threatened or endangered, the Florida black bear (*Ursus americanus floridanus*) is protected by the Florida Black Bear Conservation Rule (Rule 68A-1.004, Florida Administrative Code). The rule prohibits, among other things, the take, injuring, or wounding of black bears. Black bears have been sighted in the vicinity of TA C-74. Generally, the presence or potential occurrence of sensitive species is dependent on the presence of site-specific habitat feature and condition variables.

Table 3-3. Federally Listed and State-Listed Wildlife Species that Occur or May Occur on the TA C-74 Complex

Protected Species (Federal/State Listing)	Scientific Name	TA C-74 Complex Status
Federally Protected Species		
Okaloosa Darter (T/T)	*Etheostoma okaloosae*	Occurs in Rocky Creek, Wildcat Creek, and Sandy Mountain Branch
Red-Cockaded Woodpecker (E/E)	*Picoides borealis*	No active trees on C-74, but foraging habitat and an inactive tree are present; occurs regularly adjacent to C-74

Table 3-3. Federally Listed and State-Listed Wildlife Species that Occur or May Occur on the TA C-74 Complex, Cont'd

Protected Species (Federal/State Listing)	Scientific Name	TA C-74 Complex Status
Eastern Indigo Snake (T/T)	*Drymarchon corais couperi*	Seen on C-74
State Protected Species		
Okaloosa Darter (T/T)	*Etheostoma okaloosae*	Occurs in Rocky Creek, Wildcat Creek, and Sandy Mountain Branch
Gopher Tortoise (C/T)	*Gopherus polyphemus*	Likely to occur
Gopher Frog (NL/SSC)	*Rana capito*	
Southeastern American Kestrel (NL/T)	*Falco sparverius paulus*	
Florida Pine Snake (NL/SSC)	*Pituophis melanoleucus mugitus*	Occurs in vicinity of C-74

C = candidate; E = endangered; NL = not listed; SSC = species of special concern; T = threatened

The focus of this analysis is the potential impacts of mission-induced wildland fires and EOD detonation noise on sensitive species and their habitats. Species of particular concern include the federally listed Okaloosa darter, red-cockaded woodpecker, eastern indigo snake, and gopher tortoise (see Appendix C).

Okaloosa Darter

The entire global population of the federally threatened Okaloosa darter occurs within the Toms, Turkey, Mill Swift, East Turkey, and Rocky Creek watersheds, approximately 90 percent of which is within Eglin AFB. The Okaloosa darter occurs in the Rocky Creek and Wildcat Creek drainages, and the Sandy Mountain Branch tributary (Figure 3-5). Darters are usually found in and around root masses of streamside vegetation and woody debris. On 2 February 2010 the USFWS reclassified the Okaloosa darter from endangered to threatened (Appendix C).

Accelerated soil erosion and stream sedimentation can be particularly detrimental to aquatic habitats and species such as fish, mussels, and insects. High sediment inputs bury organic and streambed substrates that are essential to the survival of many aquatic species. Stream sedimentation can be particularly detrimental to aquatic insects that are a source of food for darters. Species such as mayflies (*Ephemeroptera*), caddisflies (*Trichoptera*), and stoneflies (*Plecoptera*) depend on a gravelly streambed that is relatively free of soil sediments (U.S. Air Force, 2011). Sediments can quickly fill in and cover gravel bottoms, which destroys habitat and may result in immediate species declines (Figure 3-4). In many cases, aquatic habitat degradation is a primary reason for declines in aquatic species populations and the listing of species as rare and imperiled.

A Biological Opinion was issued by the USFWS in July 2002 in response to a Biological Assessment of mission activities on TA C-74. The Biological Opinion focused on Okaloosa darter populations within Rocky Creek and the potential impact to habitat from test items landing within 15 meters of the creek and eventually being retrieved. The Biological Opinion provided several conservation measures that would be followed to reduce or eliminate impacts to Okaloosa darters and habitat. Adherence to these measures and the USFWS-specified terms and conditions are mandatory. To fulfill informal consultation requirements under Section 7 of the

ESA, Eglin AFB's 96 CEG/CEIEA Natural Resources Office prepared a biological assessment for the USFWS evaluating the potential impacts of TA C-74 Complex mission activities on federally listed species (Appendix D, *Section 7 Consultation*).

Red-Cockaded Woodpecker

The RCW excavates cavities in live longleaf pine trees. Due to the preservation of continuous longleaf pine forests on Eglin AFB, the Eglin Range has one of the largest remaining populations of RCWs in the country. The USFWS identified Eglin AFB as 1 of 13 primary core populations for the RCW. In 2009, the RCW population on Eglin AFB reached the designated recovery goal of 350 potential breeding groups (PBGs), and reconsultation with USFWS was completed for future management of the species. In addition to the goal of 350 PBGs, Eglin Natural Resources personnel have developed a long-term goal of 450 PBGs in order to allow for more mission flexibility. The current RCW population size on Eglin AFB is 491 active clusters and 435 PBGs (USFWS, 2014).

The Eglin RCW population is divided into an eastern subpopulation, which is composed of all clusters east of Highway 85, and a western subpopulation, which is composed of all clusters west of Highway 85. The two populations are demographically separate, and each subpopulation is in a different state of health. The western subpopulation is large and increasing (350 PBGs in 2014); the eastern subpopulation is smaller (85 PBGs in 2014) but is stable.

Active RCW cavity trees do not occur within the TA C-74 boundary. However, one inactive tree is present within TA C-74A. A number of active and inactive cavity trees occur north, east, and southeast of the TA. A total of about 15 acres of RCW foraging area occurs on and immediately adjacent to the northern portion of the TA. High-quality RCW foraging habitat consists of open pine stands with an average tree diameter at breast height of 10 inches and larger. While 100 acres of mature pine is sufficient for some groups, birds commonly forage over several hundred acres where habitat conditions are not ideal. Eglin Natural Resources Office has determined that RCW groups on the base utilize large areas for foraging habitat; thus, Eglin generally manages for 300 acres per cluster.

Eastern Indigo Snake

The federally threatened eastern indigo snake has not been sighted recently on Eglin AFB, but it may occur on the TA C-74 Complex. It may be found in and around gopher tortoise burrows, using them as dens and a place to lay eggs. They are large, conspicuous, slow-moving, and docile snakes that can grow to approximately 8.5 feet in length. Incidental contact with vehicles/equipment could result in crushing of indigo snakes. Eglin AFB requires that personnel be informed that if an indigo snake is sighted; personnel must allow the animal to leave the area undisturbed and immediately report the sighting to Natural Resources.

Gopher Tortoise

The gopher tortoise is found primarily within the sandhills and open grassland/shrubland ecological associations on the Eglin Range, where it excavates a tunnel-like burrow for shelter

from climatic extremes and refuge from predators. The primary features of good tortoise habitat are well-drained sandy soils, open canopy with adequate sunlight, and abundant food plants (forbs and grasses). Prescribed fire is often employed to maintain these conditions. Nesting occurs during May and June, and hatching occurs from August through September. Gopher tortoise burrows serve as important habitat for many other species, including the federally listed eastern indigo snake. Although no gopher tortoises have been identified on TA C-74, the test area open grassland-shrubland provides ideal tortoise habitat.

The gopher tortoise is currently a candidate species under the ESA. A 2011 *Federal Register* notice documented the 12-month finding on a petition to list the gopher tortoise as threatened in the eastern portion of its range (east of the Mobile and Tombigbee Rivers in Alabama). In December 2008, all DoD entities, as well as state agencies and other nongovernmental organizations, signed a Candidate Conservation Agreement with the USFWS that defines what each agency will voluntarily do to conserve the gopher tortoise and its habitat.

Incidental contact with vehicles/equipment and ground-disturbing activities could result in crushing gopher tortoises or their burrows. Burrows must be avoided by 25 feet. Eglin AFB requires that personnel be informed that if a gopher tortoise is sighted; personnel must allow the animal to leave the area undisturbed and immediately report the sighting to Eglin Natural Resources Office. Site-specific surveys would be conducted by Eglin Natural Resources Office for any activities that result in new ground disturbance (target area clearing, etc.). If tortoise burrows are found to conflict with mission activities and cannot be avoided by 25 feet, the tortoise(s) would be relocated.

Invasive Species

Invasive species include nonnative plants, animals, insects, diseases, and other organisms that are not native to an ecosystem and that threaten the natural biodiversity and functioning of an ecosystem. An invasive species can be defined as a species that is nonnative to an ecosystem and whose intentional or accidental introduction causes, or is likely to cause, environmental or economic damage or harm to human health.

The introduction of invasive species reduces the integrity and biodiversity of natural plant communities and subsequent wildlife habitats, as well as spreads diseases and alters ecosystem processes. The introduction and spread of nonnative invasive species may also create significant negative issues for military training or for other anthropogenic land uses. In some instances, invasive species threaten federally listed species. Invasive plant species may become established by intentional plantings or distributed by vehicles, machinery, and illegal dumping.

The maintenance and removal of vegetation and soil disturbances activities provide habitat conditions that may promote colonization by invasive plants. Many invasive plants are early seral (pioneer) species that are well adapted to the less-than-optimal seed germination and plant-growth conditions of disturbed areas. Once established, nonnative species could potentially encroach into native communities.

The Eglin AFB Invasive Nonnative Species Management Program focuses on invasive nonnative plant and animal species that cause or may cause negative environmental impacts to Eglin ecosystems. Some of the main invasive nonnative species of concern are Chinese tallow, cogon grass, Japanese climbing fern, Chinese privet, torpedo grass, feral pigs, and feral cats. The program's purpose is to protect the integrity of Eglin's natural ecosystems by reducing and controlling the spread of invasive nonnative species. The plan includes a recommendation to limit foot traffic and vehicle traffic in areas where invasive nonnative species are present to prevent the spread of the invasive and exotic species. Equipment moving through these areas needs to be washed so that all seedlings are removed before the equipment is transferred to a noncontaminated area. Standard operating procedures dictate that all vehicles are cleaned prior to use, which would lessen or eliminate the potential for the spread of invasive nonnative species (U.S. Air Force, 2005 and 2011).

3.1.5 Environmental Consequences

This section analyzes the potential impacts of EOD munition item detonations, wildland fires, and maintenance activities associated with the No Action Alternative and Alternative 1 (see Chapter 2) on TA C-74 Complex sensitive species and habitats. Previous analysis of the effects of KEMTF sled track test items that occasionally travel downrange estimated that potential adverse impacts to biological resources associated with direct physical impacts from individual items or fragments could occur, but the probability would be remote and potential impact nonsignificant (U.S. Air Force, 2002a). Retrieval methods for downrange items that land in or in the vicinity of sensitive habitats and slopes are presented in Appendix A. All sled track munitions not expended during testing are immediately retrieved and disposed by EOD at the TA C-74 EOD detonation site (see Figure 3-1 and Appendix A).

No Action Alternative

The No Action Alternative continues the authorization of the level of activity defined as the Preferred Alternative from the previous TA C-74 Complex PEA (U.S. Air Force, 2002a) (see Section 2.2.1).

EOD Munition Detonations

For conservative analysis, potential EOD detonation site biological resource noise disturbance is based on the 140 peak decibel (dBP) noise contour (6,308-foot radius) for a MK-84 live warhead (945 pounds net explosive weight [NEW]) detonated under favorable weather conditions (Figure 3-5). The noise contour was produced using the Noise Assessment and Prediction System model (Smith et al., 1992). EOD single item detonation events generally range from 10 to 12 per year. A summary of KEMTF live munition expenditures is presented in Table 2-1 and Table 2-2. Potential biological resource noise impact parameters are summarized in Table 3-4.

Table 3-4. TA C-74 EOD Detonation Site 140 dBP Noise Impact Metrics

Resource Component	Resource Impact Metrics
Sensitive Habitats	High-quality natural community – 482 acres Wetland-riparian areas – 114 acres
Sensitive Species	RCW cavity trees – 4 active and 10 inactive RCW forage area – 15 acres Okaloosa darter streams – 50,160 linear feet Potential southeastern American kestrel nesting trees – 10 inactive RCW cavity trees

dBP = peak decibels; EOD = Explosive Ordnance Disposal; RCW = red-cockaded woodpecker; TA = Test Area

Noise is considered sound that may stress species or cause hearing loss or damage. Potential noise impacts vary by species. Reptiles, including sensitive species such as the gopher tortoise and eastern indigo snake, generally do not exhibit a pronounced acoustic startle response and overall are not considered susceptible to 140 dBP noise impacts. Gopher tortoise burrows that may occur on the test area may provide some level of noise protection when tortoises or other commensal species are in the burrows. No noise impacts to Okaloosa darters are anticipated.

No data were available concerning the impacts of noise overpressures on sensitive plants. It is estimated that the primary danger to plants is the potential rupturing of the plant cells and subsequent death of the plant that may be caused by noise overpressures of 201 dBP (35 pounds per square inch [psi]) and greater. Since noise overpressures great enough to cause disruption of plant cells would not be expected, no impacts to sensitive wetland-riparian plant species or Okaloosa darter habitat are anticipated.

Birds exposed to noise may exhibit a startle response such as flushing or may exhibit longer-term effects such as nest abandonment or hearing damage. Protected species such as the RCW, southeastern American kestrel, and various migratory bird species could be exposed to such effects. Although lethality and physical injury are legitimate concerns, altered behaviors that adversely impact breeding success are considered an issue of greater overall impact to sensitive species, particularly avian species. Adverse changes in behaviors, such as nest abandonment or inability to mate, could reduce reproduction success and threaten population viability.

The impacts from EOD detonation events would be episodic and would only startle individual birds. Birds exhibiting a startle response would be expected to resume normal activities after a short time. Avian species have been documented to habituate to noise over time, although the degree and time required for habituation (diminishing of a response to frequently repeated stimulus) vary among species.

RCW foraging habitat is within a mile of the EOD open detonation area, with pine and hardwood trees and rolling terrain in between. These features could substantially dampen the received noise. Similar noise exposure likely occurs throughout the Eglin Reservation with no known detrimental impacts to the overall RCW population.

Eglin AFB personnel have observed no difference in productivity or survival between RCW clusters located near an active range and those located farther away. Eglin RCWs are routinely exposed to mission noise; in some cases healthy clusters are in close proximity to test areas characterized by frequent bombing and aircraft noise. RCWs exhibit a fairly high resilience to noise if high quality habitat is available (USFWS, 2013).

Noise impacts would not preclude RCW use of current habitat areas in proximity to TA C-74. Overall, noise-related impacts to birds would be nonsignificant. Potential noise impacts to mammals would be similar, and habituation would be anticipated, to some degree.

Detonations could also result in the collapse of gopher tortoise burrows. Typically, tortoises are able to dig out of the sandy test area soils following the collapse of the burrow entrance. There is the potential for commensal species such as the eastern indigo snake that may occupy burrows to be entombed. The proximity of burrows to the detonation site pits would generally determine their susceptibility to collapse. No burrows were observed in immediate proximity to the EOD site during a field survey in September 2014. Avoidance of active burrows will reduce the number of gopher tortoises and commensal species being entombed as a result of a collapsed burrow. Fragmentation and dispersal of detonated munitions could create debris; however, direct physical impacts to sensitive species are considered remote.

It is concluded that TA C-74 Complex biological resource species and habitat impacts associated with EOD site detonations could occur but are considered to be nonsignificant. Noise impacts would be limited to startling responses from individual birds or animals. No adverse impacts to sensitive species habitats or breeding and nesting success were identified.

Wildland Fires

Wildland fires (wildfires) are potentially uncontrolled, destructive fires that may spread quickly. The disposal of munition items at the TA C-74 EOD detonation site can create hot fragments that under ideal conditions may start fires. The high heat of thermal combustion generated by the expenditure of ordnance propellants and/or high explosives and the direct impact of superheated projectiles and metal fragments with vegetation fuel sources present a threat of wildland fires on TA C-74, particularly during dry periods. Points of ignition would likely occur within 500 feet of the detonation site. The locations of documented TA C-74 wildland fires (April 2014 to December 2014) within or in close proximity to the test area are presented in Figure 3-6.

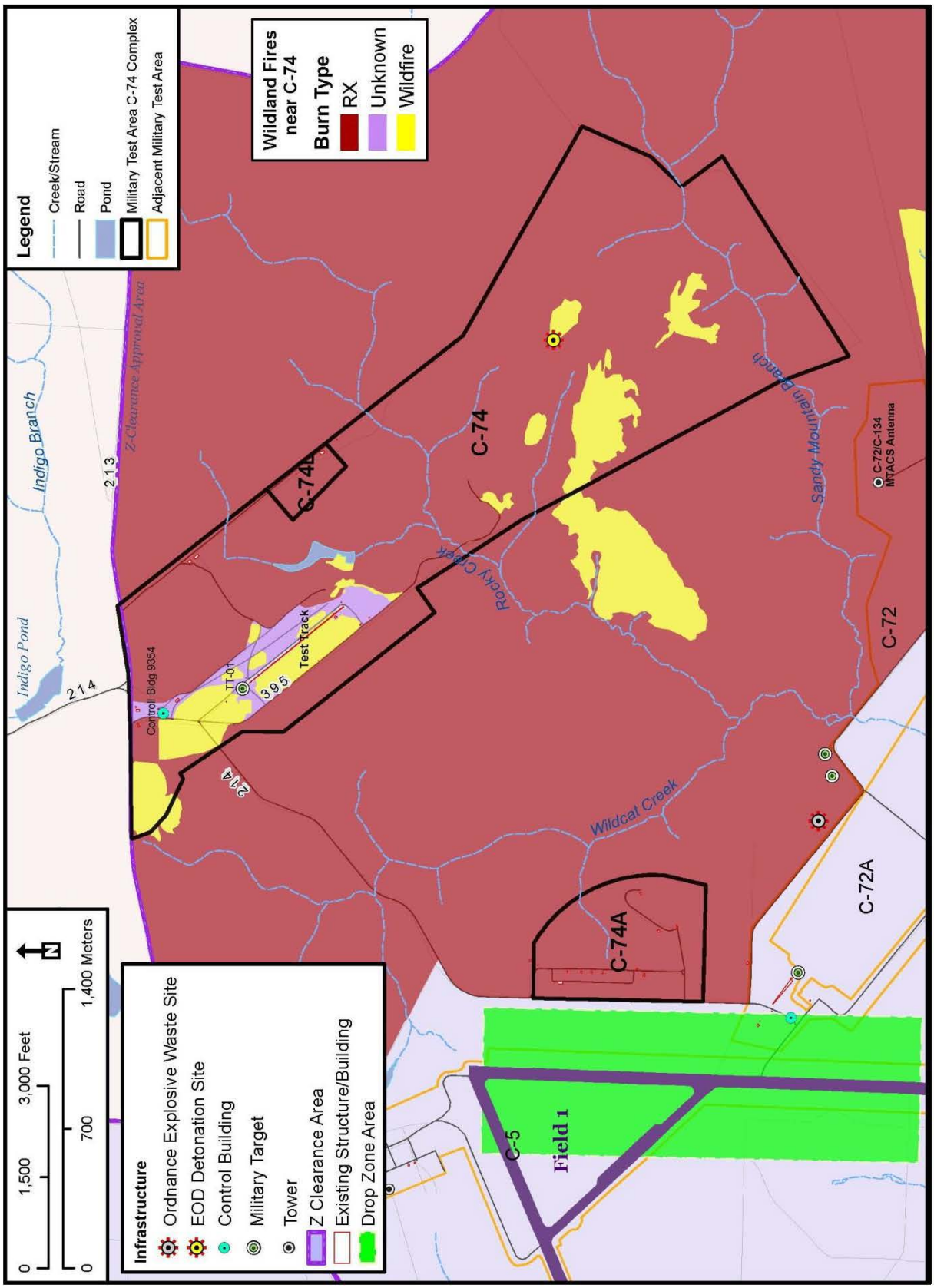

Figure 3-6. Location of TA C-74 Wildland Fires

The primary concern with fires is natural fuel buildup, frequency of fires, and the tolerance of vegetation to fire events. The typical fuel buildup in many areas of TA C-74 is relatively low (Figure 3-2 and Figure 3-3), which limits the potential for devastating fires on the open grassland-shrubland association (Figure 3-7). In some cases, test area fires that start in open grassland-shrubland areas burn out quickly, affecting relatively small areas. However, wildland fires can cause extensive damage to timber stands under conditions of high-fuel and dry climate in a sequence that is contradictory to natural fire events. The relatively low fuel loads that characterize much of TA C-74 minimize the potential for damaging fires generated by EOD open detonations or KEMTF sled track operations.

Figure 3-7. Example of an Test Area Grassland-Shrubland Wildland Fire (Less than 1 Acre)

Prescribed burning is used by Eglin AFB as an ecosystem management tool to maintain and restore native longleaf pine forests and reduce hazardous fuel loads. Based on years of ecological studies and site monitoring, the most serious threat to Eglin RCWs is the lack of suitable habitats associated with habitat fragmentation, net loss of cavity trees, and access to quality foraging habitat. Sustaining the viability of Eglin RCW species is dependent on the use of prescribed burning to properly manage fire-dependent longleaf pine foraging and nesting habitats. The ultimate goal of managing current and potential RCW forage and nesting habitat is to move the system toward proper ecosystem functioning so that the use of frequent low-intensity fire will maintain the habitat in a desirable condition (U.S. Air Force, 2005 and 2013).

Although RCW community viability is dependent on controlled prescribing burning, destructive wildland fires can damage quality habitat and may affect individual birds. Hot fires can result in the loss of nesting sites and/or damage to quality foraging habitat. If fires occur during the nesting season or at night, nestlings, fledglings and/or adults may be impacted (USFWS, 2013).

As shown in Figure 3-6, the Sandhill Association (see Figure 3-1) adjacent to the TA C-74 Complex is prescribe burned to manage the fire-dependent habitats. Some burn areas such as the fires in proximity to the EOD detonation site and KEMTF sled track were likely caused by mission expenditures. Considering the available fuel characteristics of scheduled prescribed burning of the Sandhills adjacent to the test area and vegetative cover of the test area open grassland-shrubland association (see Figure 3-1) it is concluded that the impacts of burning events likely had benign or beneficial impacts on RCW habitats. No adverse impacts to RCWs or their habitats were identified and are therefore considered nonsignificant. The RCW Programmatic Biological Opinion (USFWS, 2013) addressed potential impacts resulting from all management actions and military missions at Eglin AFB, including the potential for wildfire. All applicable requirements contained in the Biological Opinion are listed in Section 5.2.6, *Management Practices*, and would be adhered to under the No Action Alternative.

Test area wildland fires could also impact wetland-riparian association habitats (see Figure 3-1). Of particular concern to wetlands would be the loss of vegetation that could affect soil stability and the quality of sensitive species habitat. Generally, in riparian areas the fire burns back the aboveground biomass leaving the root systems of riparian woody species such as titi and gallberry alive and intact. Most species will vigorously resprout and create new aboveground growth. Openings in the canopy also create an opportunity for other plant species to become established. Typically, woody species associated with Eglin floodplains and stream edges are adapted to fire events and continue to provide stability to soils preventing erosion and side slope degradation.

Potential fire-related impacts to sensitive species such as the Okaloosa darter would more likely be aligned with (1) changes to in-stream light and temperature attenuation associated with a fire that top-kills riparian vegetation and (2) fire suppression activities. As discussed in the preceding paragraph, potential impacts associated with top-kill would likely be minor and temporary. In most cases, fire events result in the improvement of streamside habitats for the darter and the gopher frog (Williams, 2015). Wildfires may require fire suppression activities, which can cause hydrologic alteration and sedimentation of aquatic habitats. However, as a protective measure, streams (including Okaloosa darter streams), riparian buffers, and wetlands on Eglin AFB are classified as biologically sensitive areas and are, therefore, designated as limited suppression areas. Within these sensitive areas, plows are not used off range roads for fire suppression except in extreme conditions and with the approval of the Wildland Fire Program Manager (WFPM), the Natural Resources Manager, or their designee, thereby minimizing the potential for damage to aquatic habitats. If wildfire conditions are such that plowed lines are deemed necessary in these areas, the WFPM, Assistant WFPM, Chief of Natural Resources, or their designee will approve the use and location of the lines. For any darter streams affected by emergency wildfire control efforts, damage would be repaired in coordination with the USFWS, and Eglin AFB would submit an incident report detailing suppression and rehabilitation activities.

Because gopher tortoises frequently occupy fire-dependent communities, fire tends to have a beneficial effect on the habitat used by these species. Periodic fire keeps the sandy soils open for burrowing and maintains the early successional stages that tortoises require. Preferred gopher foods such as the partridge pea increase in response to fires. Although no documentation of fire-related mortality to gopher tortoises by fires was identified, it is possible that a tortoise or other species trapped in its burrow during a fire could be asphyxiated. Individual tortoises, burrows, or egg clutches could be impacted during fire suppression activities such as vehicle operation and the plowing of firelines. However, given the relative infrequency of wildfires on the TA requiring suppression actions, it is not expected that the risk would be significant. During such activities, Eglin AFB personnel would avoid any tortoises sighted to the extent practicable. No adverse impacts to gopher tortoises were identified due to wildfires or response activities.

Ground disturbance associated with fire events may provide opportunities for invasive plant species to become established. Once established, nonnative species could potentially encroach into native communities (U.S. Air Force, 2011). However, adaptive native vegetation generally quickly recovers reoccupying the burn areas. The primary threat for the introduction and spread of invasive plant species is the TA C-74 Complex range roads and bush hogging equipment used to maintain the test area open grassland-shrubland association. Many invasive plants are early

seral (pioneer) species that are well adapted to the less-than-optimal seed germination and plant-growth conditions of disturbed roadside areas. The Eglin AFB Invasive Nonnative Species Management Program provides measures to minimize invasive plant species impacts on ecosystems (see the Invasive Species subsection of Section 3.1.3). Prior to use on Eglin AFB, all out-of-area equipment must be inspected for invasive nonnative species and cleaned in accordance with Armed Forces Pest Management Board Technical Guide No. 31, *Guide for Agricultural and Public Health Preparation of Military Gear and Equipment for Deployment and Redeployment*.

Alternative 1: Authorize Current Baseline (FY2009 – 2013) Level of Activity

This alternative would authorize the current level of activity as defined by the TA C-74 mission expenditures for FY 2009 through FY 2013, referred to here as the current baseline (see Section 2.2.2). Based on mission expenditure data presented in Table 2-1, the potential EOD munition detonations and wildland fire impacts to biological resources associated with Alternative 1 would be similar to the No Action Alternative. As under the No Action Alternative, no adverse effects to biological resources would be expected under Alternative 1.

3.2 CULTURAL RESOURCES

3.2.1 Definition of the Resource

Cultural resources consist of prehistoric and historic districts, sites, structures, artifacts, and any other physical evidence of human activity considered important to a culture or community for scientific, traditional, religious, or other reasons. They include archaeological resources (both prehistoric and historic), historic architectural resources, and American Indian sacred sites and traditional cultural properties (TCPs).

3.2.2 Regulatory Requirements

Historic properties (as defined in 36 CFR 60.4) are considered for potential adverse impacts from an action. Historic properties are significant archaeological, architectural, or traditional resources that are either eligible for listing, or listed in, the National Historic Preservation Act (NHPA) of 1966, as amended. Eglin AFB is required to consider the effects of its undertakings on historic properties listed, or eligible for listing, in the National Register.

Eglin AFB coordinates NEPA compliance with their NHPA responsibilities to ensure that historic properties are given adequate consideration in the preparation of environmental documents such as this EA. As per AFI 32-7065 (Sections 3.3.1 and 3.3.2) and 36 CFR 800.8, Eglin AFB incorporates NHPA Section 106 review into the NEPA process or substitutes the NEPA process for a separate NHPA Section 106 review of alternatives.

3.2.3 Analysis Methodology

This analysis considers the potential direct and indirect physical impacts of mission and mission-support activities on TA C-74 Complex cultural resources. Significant impacts to cultural resources can occur through direct impacts to test area historic properties caused by physically

altering, damaging, or destroying all or part of sites, altering the characteristics of the environment associated with sites, or neglecting sites to the extent that it deteriorates or leads to site destruction. Indirect impacts may result from project-related actions that eventually lead to effects. Because of the unique nature of archaeological sites, impacts resulting from ground disturbance are considered permanent and nonreversible. Section 106 of the NHPA (16 USC 470 et seq.) requires agencies to seek ways to avoid, minimize, or mitigate adverse impacts on cultural resources.

The focus of this analysis is the potential effects of human-induced ground-disturbing activities on TA C-74 archaeological sites. Specific activities evaluated include KEMTF expended item retrieval, open grassland-shrubland vegetation management, and EOD detonation site operations (see Section 3.1.3). Potential impacts are assessed by identifying the types and locations of test area activities, determining the locations of archaeological sites that could be affected, and describing activity-based impact scenarios. No historic properties have been identified on the TA C-74 Complex. Cultural resource ground disturbance effects are primarily associated with expended item and detonation fragment ground impacts, mowing equipment operation, and munition item retrieval activities. Mission-generated wildland fires are not anticipated to create conditions that would increase soil erosion-induced ground disturbances.

Cultural resources were analyzed by assessing each resource's state of investigation and condition, then evaluating the resource as it intersects with the Area of Potential Effects (APE) created by the Proposed Action. As defined under 36 CFR 800.16(d), "the Area of Potential Effects is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, if such properties exist."

The APE is influenced by the scale and nature of the Proposed Action and may differ according to the kinds of effects caused by the action. The APE for this project is assumed not to extend beyond the footprint of the activity boundaries as defined under each alternative.

3.2.4 Affected Environment

Surveys have been conducted within the majority of areas identified as having potential for cultural resources within TA C-74. A total of 661 acres were surveyed within TA C-74, with an additional 116 acres surveyed within TA C-74A and 13 acres within TA C-74L. The only remaining area to be surveyed is a small sliver of potential historic homestead acreage to the southwest boundary of TA C-74. Until Eglin AFB accomplishes a complete survey of the remaining unsurveyed areas, the danger of direct physical impact to unknown cultural resources is always a possibility.

To date, surveys have identified three archaeological sites on TA C-74 proper evaluated as ineligible for listing on the NRHP. Three additional sites also evaluated as ineligible for listing on the NRHP are located in close proximity to the boundaries of TA C-74. The sole NRHP-eligible archaeological site (8WL2092) is located within TA C-74A. Site 8WL2092 is considered a restricted access area and will continue to be avoided by range personnel.

Within TA C-74A, buildings 9518, 9519, 9520, and 9521 are recommended as eligible for listing on the NRHP as important landscape features to the Cold War Era Test Complex at Range E/ TA C-72. Building 9532 is considered to be eligible to the NRHP on its own merits. Within

TA C-74, building 9354 is considered eligible to the NRHP. Building 9506 is not NRHP-eligible on its own merits but is currently being considered for inclusion in a TA C-74 historic district. The structure was moved to TA C-74 in 1972 and lacks historic significance. No NRHP-eligible historic cemeteries or TCPs are located in the TA C-74 complex (U.S. Air Force, 2014).

3.2.5 Environmental Consequences

This section analyzes the potential impacts of KEMTF expended item retrieval and mechanical vegetation management associated with the No Action Alternative and Alternative 1 (see Chapter 2) on TA C-74 on cultural resources. In the event of unexpected discovery of cultural resources in areas shown to be free of significant cultural resources, all activity in the immediate vicinity must cease until the proponent notifies the Base Historic Preservation Officer and they render a determination of significance.

No Action Alternative

The No Action Alternative continues the authorization of the level of activity defined as the Preferred Alternative from the previous TA C-74 Complex PEA (U.S. Air Force, 2002a) (see Section 2.2.1). The potential for impacts to buried cultural resources can vary based on ground activity spatial and temporal variables. Some ground-disturbing activities, such as TA C-74 vegetation management, are conducted yearly over 64 percent of the test area (see Table 3-1), whereas disturbances associated with downrange retrieval of expended KEMTF sled track items and EOD detonation site operations would be scattered and occur infrequently.

No adverse effects to known TA C-74 cultural resources are anticipated. Test area mission activities would be restricted from known cultural resource locations to avoid potential impacts. The following subsections evaluate the potential for impacts from KEMTF expended item retrieval, vegetation maintenance, and EOD detonation operations on TA C-74 historic properties.

KEMTF Expended Item Retrieval

If there is a misfire during sled track testing, expended munition items may travel downrange of the target a few hundred feet to over a mile. Items can range in weight from a few pounds to several hundred pounds. In some cases, test items come to rest along sensitive slope areas, streams, riparian zones, and wetlands.

Test area personnel have developed an item recovery method to minimize the potential effects of heavy equipment on sensitive areas. For items that come to rest in sensitive areas, the recovery equipment is parked on a stable, flat area and a cable is used to drag the item to the retrieval location. Wheeled and tracked vehicles are no longer used for sensitive area item recovery, and smaller items are left in place if recovery is not required (Prescott, 2014).

Based on site conditions, additional retrieval practices or avoidance of the unsurveyed area along the southwest boundary may be required to prevent disturbance to high-probability areas.

Open Grassland-Shrubland Mechanical Vegetation Management

Vegetation control on TA C-74 is necessary to suppress the density and growth of native vegetation, particularly woody species. When vegetation maintenance activities are not conducted, plants grow to heights and densities that interfere with the ability to conduct test and training missions, impede the operation of ground-based instrumentation, block line-of-sight requirements, and complicate munitions debris recovery. The vegetation targeted as most problematic is fast-growing hardwood species such as scrub oaks (turkey and bluejack oak), persimmon, live oak, and sand post oak and woody shrubs such as American holly, dwarf huckleberry, gopher apple, sparkleberry, and sumac. Mechanical mowing using a commercial tractor and a 12- to 24-foot-wide bush hog mower is the primary means of vegetation management on TA C-74 (Figure 3-8; Figure 3-9). Upland area mowing is performed once every 12 to 18 months. Mowing height ranges from 4 to 8 inches depending on mission requirements and/or type of vegetation being mowed.

Figure 3-8. Eglin AFB Test Area Bush Hog Mower

Figure 3-9. TA C-74 Tractor and Bush Hog Mower Stream Slope Soil Damage

The use of high-disturbance roller drum chopping to control woody species was discontinued in the 1990s and is not anticipated as a future vegetation maintenance practice (Prescott, 2014). A description of this legacy practice is presented in Appendix A.

It is concluded that bush hog mowing of TA C-74 open grassland-shrubland areas could disturb the unsurveyed area along the southwestern border of C-74. Until this area is fully investigated by the Eglin AFB Cultural Resource Office, this area that is considered high-probability for historic homestead should be avoided and not subject to further ground disturbing activity.

EOD Detonation Site Operations

Single-item detonations at the TA C-74 EOD site create fragment debris and require periodic cleanup. It is anticipated that most of the larger fragments would remain within a 500-foot buffer of the detonation pits (see Figure 1-3). Since no cultural resources have been identified within the 500-foot buffer or in proximity to the EOD site, the impact of detonation fragments are not anticipated to affect buried archaeological features. Personnel periodically recover detonation debris by hand. No historic properties were identified as occurring within or near the buffer area. No adverse impacts to cultural resources from detonation events or debris recovery operations are anticipated.

Wildfire Suppression Activities

Wildlife suppression activities could potentially include the use of firefighting vehicles and digging of plow lines on the test area. Vehicles operating off the road have the potential to impact archaeological features close to the surface. Plow lines could impact items located deeper in the soil. However, significant impacts are not anticipated because Eglin AFB fire personnel coordinate with the Cultural Resources Office on locations of known historic properties.

Alternative 1: Authorize Current Baseline (FY2009 – 2013) Level of Activity

This alternative would authorize the current level of activity as defined by the TA C-74 mission expenditures for FY 2009 through FY 2013, referred to here as the current baseline (see Section 2.2.2). Based on mission expenditure data presented in Table 2-1, the potential for impacts to cultural resources associated with Alternative 1 would be similar to that under the No Action Alternative.

4. CUMULATIVE IMPACTS

According to Council on Environmental Quality regulations, cumulative effects analysis should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR 1508.7). Cumulative effects may occur when there is a relationship between a proposed action or alternative and other actions expected to occur in a similar location or during a similar time period. This relationship may or may not be obvious. The effects may then be incremental (increasing) in nature, resulting in cumulative impacts.

Actions overlapping with or in proximity to a proposed action or alternative can reasonably be expected to have more potential for cumulative effects on "shared resources" than actions that may be geographically separated. Similarly, actions that coincide temporally tend to have a greater potential for cumulative effects.

Analysis was conducted by first identifying past, present, and reasonably foreseeable actions as related to the ROI for the particular resource. Cumulative impacts were then identified if the combination of proposed actions and past, present, and reasonably foreseeable actions were to interact with the resource to the degree that incremental or additive effects occur.

4.1 PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS

The relevant past, present, and reasonably foreseeable actions associated with the impacts of the Proposed Action include continued use of the test and interstitial areas for military test and training, existing base development and operations, plus nearby development and infrastructure improvements such as roads, pipelines, and power transmission lines. There are no past and present actions within the immediate vicinity of TA C-74 other than ongoing interstitial ecosystem management activities at Eglin AFB.

Localized habitat alterations, noise impacts, or direct physical impacts to species can have a cumulative impact when viewed on a regional scale if that loss or impact is compounded by other events with the same end result. In other cases, impacts decrease when viewed on a larger spatial and temporal scale. Although negative impacts would occur to some biological resources, overall, the past, present, and reasonably foreseeable action would not threaten the continued existence of any biological resources; thus, impacts would not be significant. Implementation of management actions, regulatory requirements, and an increase in Eglin AFB prescribed fire support would further reduce the potential for negative impacts to biological resources.

The sandhill association longleaf pine ecosystems in proximity to the TA C-74 Complex are actively managed by Eglin Natural Resources, primarily through sand pine eradication, hardwood control, pine plantation management, invasive nonnative plant control, and prescribed burning. Wildland fire support includes fire prevention, detection, suppression, readiness, fire line rehabilitation, and training. Increases in fire-starting military missions associated with some Eglin test areas other than TA C-74 could increase wildland fire events and support requirements

(USFWS, 2013). TA C-74 mission-generated wildfires that spread into adjoining longleaf pine communities are not anticipated to result in adverse impacts, since these are currently prescribed burn areas with relatively low fuel loads. Impacts are most likely to be beneficial to affected sandhill ecosystem plant and animal communities. In addition, no cumulative impacts to potential timber management or logging operations would likely occur.

Damage to the nature, integrity, and spatial context of cultural resources, they can sustain a cumulative impact if the initial act is compounded by other similar losses or impacts. The alteration or demolition of historic structures or the disturbance or removal of cultural artifacts may incrementally impact the cultural and historic setting of Eglin AFB.

These proposed and ongoing activities, which involve potentially ground-disturbing activities, are guided by current operating instructions, such as EAFBI 13-212. These operating instructions, as well as standard operating procedures set forth in Eglin AFB *Integrated Cultural Resources Management Plan*, would be implemented as well. Thus, given the required coordination with TA C-74 and 96 CEG/CEIEA Cultural Resources Office, any implemented avoidance, required mitigations and best management practices, as well as any measures recommended by the SHPO, mission activities are not expected to contribute to cumulative impacts to historic properties.

4.2 IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA requires environmental analysis to identify any irreversible and irretrievable commitments of resources involved in the implementation of the Proposed Action or alternatives. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the uses of these resources have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., extinction of a threatened or endangered species or the disturbance of a cultural site). Implementing the Proposed Action through any of the alternatives would require a commitment of natural, physical, human, and fiscal resources. In all of these categories, irreversible and irretrievable commitments of resources would occur.

5. MANAGEMENT PRACTICES

5.1 REGULATIONS, PLANS AND PERMITS

An ESA Section 7 informal consultation with the USFWS regarding impacts to federally listed species, primarily the Okaloosa darter, is required for future TA C-74 Complex testing operations. Consultation with the USFWS would establish appropriate avoidance and minimization measures, as well as terms and conditions, to minimize impacts to threatened and endangered species. The Biological Assessment and USFWS concurrence is included in the Final REA as Appendix F. A Programmatic Biological Opinion for the RCW is already in place and is referenced in the analysis.

Some components of this action would take place within or otherwise may affect the jurisdictional concerns of the Florida Department of Environmental Protection and, therefore, would require a consistency determination with respect to Florida's Coastal Zone Management Plan under the Federal Coastal Zone Management Act (Appendix E). A summary of relevant environmental laws, regulations, and policies is presented in Appendix B.

5.2 MANAGEMENT ACTIONS

This REA was prepared with consideration that the following management requirements would be implemented for TA C-74 Complex missions. The proponents are responsible for ensuring these management requirements are met.

5.2.1 General

Comply with all requirements stated in Eglin AFB Instruction 13-212, *Range Planning and Operations*.

5.2.2 Ordnance and Noise

- Observe a restriction of a maximum of 140-dB noise level leaving the Eglin Reservation boundary. An approximate calculation is 600 × the cube root of the NEW = distance to the reservation boundary (in feet).
- No detonation can produce a seismic shock of more than 1 inch per second peak particle velocity when reaching any structure. An approximate calculation is 60 × the square root of the NEW = distance to the structure (in feet).
- Prior to detonation of explosive materials, consider the effects of current weather as well as other safety parameters outlined in the test directive.
- All inert weapons on or near the surface, including practice bombs with spotting charge, must be recovered, removed, and destroyed.
- Follow regulations for cleanup of debris and hazardous materials.
- Qualified personnel (described in individual test directives) will supervise the use of all pyrotechnic devices.

- Do not try to remove flag pyrotechnic devices that fail to detonate. EOD staff will be notified for dud disposal (described in individual test directives).

5.2.3 Pyrotechnics (Rocket Motors)

- Prior to mission initiation, obtain the daily fire danger rating and follow restrictions per the Eglin Wildfire Specific Action Guide (U.S. Air Force, 2008a). Prior to testing, coordinate with Jackson Guard concerning the fire weather index.
- Clean up debris (mandatory as described in individual test directives).
- Do not release chemicals or metals into streams indirectly by releasing toxic aerosols in the vicinity of streams.
- Do not release chemicals, metals, or toxic aerosols within or near stands of mature longleaf pines.
- Adhere to Eglin's Wildfire Specific Action Guide restrictions for pyrotechnics use.
- Allow no deployment of flares when surface winds exceed 15 knots or when the fire index presents an unacceptable hazard.

5.2.4 Soil Resources

- Design vegetation control practices that minimize surface disturbance and create implementation strategies for increasing vegetative cover.
- Control the location and design of mission activities to avoid creating adverse slope shapes or gradients and/or to reduce vegetative cover.
- Locate mission activities that result in surface disturbance away from slopes sensitive to erosion.
- Establish low-growing grassland communities on severely disturbed erosion response units.
- Design concave slope segments on newly constructed targets.
- Reduce the gradients of severely eroding slopes to the degree possible and revegetate.

5.2.5 Water Resources

- Conduct target and ordnance debris removal and disposal of solid debris from blanks, chaff, smokes, and flares in accordance with Air Force regulations.
- Within 200 feet of water bodies, do not conduct digging or off-road driving, use pyrotechnics/munitions, or detonate explosives.
- Use established roads to cross streams.
- Do not alter stream flow or withdraw water from TA C-74 streams.
- Do not drive within 100 feet of the slopes of headwater streams.
- Coordinate with Eglin Natural Resources on situations where ordnance must be removed from streams.

5.2.6 Biological Resources

- Ensure that all mission personnel are provided with restrictions regarding protected species, either in verbal or written form. Provide maps when necessary.
- All vehicles and personnel must cross streams only at established crossings or on bridges.
- Contact Eglin's Natural Resources Office for any munitions that land in darter streams.
- Comply with the Natural Resources Office and the FWC established hunting, trapping, and fishing regulations, unless the Natural Resources Office and the FWC grant specific authorization to do otherwise.
- Limit tree cutting to sand pine, slash pine, live oak (for tree thinning only), and scrub oak. Do not cut down longleaf pines for any reason.
- Coordinate with the Natural Resources Office for all military activities within or near stands of mature longleaf pine and also those scheduled during RCW nesting season (late April – July).
- Adhere to Eglin AFB Wildfire Specific Action Guide restrictions regarding forest fire danger ratings for munitions and pyrotechnics. Per the guide, if fire danger is:
    - Moderate, there are no restrictions on pyrotechnics. A fire watch is required to be posted for a minimum of 20 minutes after use of pyrotechnics has been completed.
    - High, use caution with pyrotechnics and post a fire watch for a minimum of 30 minutes after use of pyrotechnics has been completed.
    - Very high, restrict pyrotechnics to hand-thrown simulators or smoke grenades. NO FLARES are allowed below 1,000 feet above ground level. Limit bomb dummy unit (BDU) 33s and other munitions that may start fires to "safe" areas. Use simulators or grenades only on roads or in pits. Cleared areas for pyrotechnics should be a minimum of 1.5 times the blast radius.
    - Extreme, NO PYROTECHNICS are allowed without prior approval from the Wildland Fire Program Manager or designee at Eglin AFB Natural Resources (Jackson Guard) (Natural Resources Office, phone: 882-6233, fax: 882-5321).
- Fire danger can be determined by calling the dispatch office or by consulting the Environmental Management website in the Fire Management Section (https://em.eglin.af.mil/ems/emsn/emsnp/).
- Immediately notify Eglin AFB Fire Department Dispatch of any wildfire.
- Do not drive nails or other objects into trees for any reason, unless there is special authorization to do so.
- Provide personnel with a description of the indigo snake, its behaviors, and protection under federal law, and give them instructions not to injure, harm, or kill this species.
- Stop activities if an eastern indigo snake, gopher tortoise, or black bear is sighted and allow the animal to move away from the site before resuming activities.

- Comply with the USFWS standard protection measures as described in the *Programmatic Biological Assessment for the Eastern Indigo Snake* (U.S. Air Force, 2008b).
- Prior to ground-disturbing activities or establishment of a new target area, contact the Natural Resources Office for a gopher tortoise/indigo snake survey.
- Avoid gopher tortoise burrows by a minimum of 25 feet.
- For any gopher tortoise burrows in imminent danger from munitions testing or training, contact Eglin Natural Resources for relocation.
- Eglin Natural Resources will follow the gopher tortoise permitting guidelines (FWC, 2008) for relocation of gopher tortoises and commensals (i.e., indigo snake).
- Allow only transient (lasting less than two hours) foot traffic and vehicular traffic on established roads/trails within a 200-foot buffer around marked RCW trees.
- When conducting ground training activities, follow the Army guidelines for activities within RCW habitat (U.S. Army, 2007)
- Log and report sightings of endangered species (e.g., indigo snake) to the Natural Resources Office.
- Do not use explosives or munitions within or near stands of mature longleaf pines.
- Prior to use on Eglin AFB, inspect all out-of-area equipment for invasive nonnative species and clean in accordance with Armed Forces Pest Management Board Technical Guide No. 31, *Guide for Agricultural and Public Health Preparation of Military Gear and Equipment for Deployment and Redeployment*.
- Implement all applicable testing and training Terms and Conditions identified in the RCW Programmatic Biological Opinion, which may include:
    - Unless prior written approval has been granted by the Chief of the Natural Resources Office, personnel will follow the *Management Guidelines for the Red-cockaded Woodpecker on Army Installations* (U.S. Army, 2007) within the 200-foot buffer zone around individual RCW cavity trees, including the requirement that ground training activities within the 200-foot buffer do not last longer than 2 hours.
    - Berms will be constructed to collect ammunition or shrapnel for missions that may impact active cavity trees or foraging habitat.
    - Do not establish new high-impact areas within 500 feet of active RCW trees, including but not limited to helicopter landing zones, off-road all-terrain vehicles (ATV)/motorcycle training areas, established dig areas, and designated bivouac sites without prior written authorization from the Chief of the Natural Resources Office.
    - Cutting of RCW cavity trees (marked with one band of white paint) is prohibited without prior written authorization from the Chief of the Natural Resources Office.
    - Cutting of any longleaf pine tree is prohibited without prior written authorization from the Chief of the Natural Resources Office.

- Range users must check the fire danger rating daily, and follow the Eglin Wildfire Specific Action Guide restrictions for pyrotechnics use by class day.
- Range users must immediately notify the Joint Test & Training Operations Control Center and Eglin Fire Dispatch of any wildfire observed.
- Annually provide ground training units with Global Positioning System (GPS) coordinates for current RCW buffers. Units will either load these into their GPS devices or add to field maps.
- Prior to ground training activities in RCW habitat, units must provide their personnel with RCW restrictions, either in verbal or written form, and incorporate information into maps when necessary.
- Per AFI 32-7064, Eglin must ensure adequate personnel and resources are available for addressing mission-started wildfires.
- Eglin AFB must conduct spot checks in training areas to check for impacts and ensure personnel are complying with RCW-related requirements and restrictions.
- Reduce impacts to RCWs and foraging habitat from all construction and land-clearing activities to the extent practicable.
- During the pre-planning phase, proposed land clearing and construction projects must be coordinated with an Eglin Natural Resources Office endangered species biologist.
- All new construction must reduce artificial night lighting that affects wildlife to the extent practicable using the most current cited resources available at that time.
- Prior to tree-clearing and construction activities in RCW habitat, personnel must be provided with RCW restrictions, either in verbal or written form, and incorporate information into maps when necessary.
- Before any tree clearing begins in suitable RCW habitat, a survey is required of the entire project area to identify undocumented cavity trees.
- All inactive RCW trees must be inspected prior to tree-cutting to ensure no birds are living in the cavities. Re-activated clusters must follow the Terms & Conditions for active clusters.
- No RCW cavity tree will be cut down that contains eggs or chicks. The tree clearing must wait until the young fledge; Eglin Natural Resources Office will then catch and translocate the adults and fledglings (if they are roosting in a cavity).
- In the event that an entire active cluster needs to be removed, a new recruitment cluster will be established in a suitable area, and all RCWs within the cluster will be captured and moved to the new cluster.
- Eglin AFB must conduct spot checks every two weeks in construction areas to check for impacts and ensure personnel are complying with RCW-related requirements and restrictions.

  - During pre-planning with Natural Resources staff, emphasis shall be placed on reducing the impacts to all natural and artificial RCW cavity trees, as well as other old-growth and flat-top pines as potential cavity trees.

- Implement all applicable downrange munition item recovery conservation measures identified in the TA C-74 Biological Assessment, which may include:
  - Use the least intrusive method available for test item recovery.
  - Remove any test item along the same path that it entered the area to reduce habitat disturbance.
  - Avoid the use of heavy equipment within the stream or along the streambanks (typically items will be towed out by a cable).
  - Repair any streambank area affected and restore erosion control measures along the stream.
  - Avoid gopher tortoise burrows when retrieving test items.

5.2.7 Chemical Materials/Range Debris

Examine areas in which small arms, including blank ammunition, are expended and pick up casings. Recycle blank cartridge casings (as described in individual test directives).

5.2.8 Cultural Resources

Policies and procedures for complying with cultural resources laws and regulations and specific operating procedures can be found in the Eglin ICRMP and EAFBI 13-212:

- Areas marked or designated as by the Eglin Cultural Resource Office as sensitive will be avoided and designated as restricted access areas.
- All missions involving a use of land that has not been previously cleared by Eglin CR for that same type of activity must be cleared through Eglin Cultural Resources Office via the Environmental Impact Assessment Process (EIAP). This will usually entail the completion of Air Force Form 813. The EIAP office (882-0044) is the standard point of contact for information on how to fulfill this requirement.
- All historic properties (defined as historic buildings, historic or prehistoric structures, and/or archaeological sites) will be avoided whenever possible in the course of any testing and training activity.
- Areas deemed high probability for containing cultural resources that have not yet been surveyed are NOT cleared by the Eglin Cultural Resources Office, and, therefore, are presently off-limits to all weapons testing and ground maneuvers.
- Range managers must, therefore, maintain regular dialog with the Eglin Cultural Resources Office, access the Center Scheduling Enterprise (CSE), and employ the EIAP process in order to ensure required avoidance of protected cultural resources.
- If archaeological deposits (buried architecture, features such as dense deposits of shell, or clusters of artifacts) are encountered on the ground in the course of any mission activity,

all disturbance of the ground surface shall cease and the discovery will be secured from further harm. The Eglin Cultural Resources Office (882-8459 or 883-5201) shall be immediately informed of the discovery.

- If human remains and/or funerary objects such as a coffin or complete, intact aboriginal pottery are discovered in the course of any mission activity, the following actions are to be taken. All disturbance of the ground surface in the area shall cease and the discovery will be secured from further harm until further notice. The Eglin Cultural Resources Office shall be immediately informed of the discovery.

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APPENDIX A

TA C-74 COMPLEX MISSION CAPABILITIES AND INFRASTRUCTURE

ACRONYMS AND ABBREVIATIONS

96 CEG	96th Civil Engineer Group
96 CEG/CEIEA	96th Civil Engineer Group/Environmental Assets
96 TW/TSR	96th Test Wing/Technical Directorate/Range Services Division/Land Ranges
AFMC	Air Force Materiel Command
CCTV	Closed Circuit TV
CZR	coordinate zero reference
DU	depleted uranium
EOD	Explosive Ordnance Disposal
°F	Fahrenheit
HEI	High Explosive Incendiary
HERD	High Explosives Research and Development
kV	kilovolt
NA	not applicable
O&M	Operations and Maintenance
RUR	Range Utilization Report
RUT	Reusable Target
SAW facility	industrial strength hacksaw facility on TA C-74
T&E	Threatened and Endangered
TA	Test Area
TT-	Tactical Target

TA C-74 COMPLEX MISSION HISTORY

Test Area (TA) C-74 became operational in 1956 as the Damage Potential Range. The test area featured a 2,000-foot track to evaluate the damage potential of munitions under varying conditions and on a variety of targets. The Gunnery Ballistics Facility (C-74L) was part of the original establishment of the TA C-74 Complex. While C-74A was established around the same time (under a different name), it was originally considered part of the TA C-74 Complex and was used for static testing of rockets (U.S Air Force, 2007).

TA C-74 was initially used to test live rockets between 1956 and 1959. A period of inactivity lasted for four years on TA C-74 from 1959 to 1963. Beginning in 1964, the test track began to be actively used to evaluate the effects, or "damage potential," of acceleration on conventional munitions and components. Expansion of the test area facilities began during the late 1960s and extended into the early 1970s. Expansion included the addition of an 83-foot camera tower at the target end of the track, additional launch barricades for instrumentation along the track, and the use of reinforced-concrete targets weighing up to 100 tons each. For the next 25 years, the test area remained predominantly the same with only minor changes being made to facilities. In 1995, Tactical Target 1 (TT-1) was added at the northwestern end of the track, which includes a reusable room. TT-1 is a bunker with a reinforced-concrete deflector wall. Munitions that are developed for use against hardened targets are evaluated against the target (U.S. Air Force, 2007).

TA C-74A, originally part of TA C-74, was established in the early 1950s as a static test facility and contained a static test stand, rocket storage magazines, and a temperature conditioning facility. During the 1970s, the facility became known as the Munitions Analysis Facility. During this time, a remote-control, industrial hacksaw was installed (known as the SAW facility). The rocket static test stand was converted to a facility that could house the 300-kilovolt (kV) X-ray machine from TA C-74L that was moved to TA C-74A and supplemented with an additional 500-kV X-ray machine. Eventually, the 300-kV X-ray machine became the only X-ray machine located at the facility. The combination of X-ray machines and industrial hacksaw provided the ability to both nondestructively analyze the munitions before and after testing, as well as invasively section the munitions, structures, and high-explosive fill for analysis post-test (U.S. Air Force, 2007).

TA C-74L became operational in 1956 as the Gunnery Ballistics Facility of the Damage Potential Range. The test area contained two open firing bays that were used to evaluate the ballistics of various munitions. The test area was also used for charge firing and static detonations that extended downrange. The area was expanded in the 1960s and used for testing special explosive charges, such as shaped charges up to 500 pounds in size. During this time, the Flexitron X-ray machine was installed in a fabricated building and used for analysis of the munitions expended on the damage-potential track. The X-ray machine was eventually moved to TA C-74A (U.S. Air Force, 2005). In the early 1970s, munitions containing depleted uranium (DU) began being tested on TA C-74L. This lasted until 1979 and caused contamination of approximately 10 acres (U.S. Air Force, 2007).

The contaminated area was partially cleaned in 1977. In 1980, additional cleanup was performed and over a thousand 55-gallon drums were filled with contaminated soil. Additional

contamination was discovered in 1981 on target plates. The plates were unstacked, washed, and monitored for DU contamination levels. At a later date, however, levels of DU above the defined limit were detected, which prompted the removal of more contaminated soil (U.S. Air Force, 2007). The last radiological abatement project in 2006 cleaned the site to residential levels releasing it for operation with land use controls. The ballistics testing gun was moved to TA C-64 in 2012; the site has remained inactive since (Curry, 2014).

Munitions and weapons systems known to have been expended on TA C-74 include high-explosive rockets, fuses, and munitions of various sizes. Special explosive charges, live rockets, various munitions, high-explosive projectiles, and munitions containing DU are known to have been expended on TA C-74L. Expendables for TA C-74A are limited to rocket fuzes that were evaluated during the time the test area was used for static testing. Since TA C-74A became the Munitions Analysis Facility, no ordnance has been expended on the test area (U.S. Air Force, 2007).

To capture a historical dataset of all expendables and types of missions for the Eglin Range, the Range Environmental Planning Office began producing the *Range Utilization Report* (RUR) beginning in 1995. This report contains a compilation of the types of mission activities and expendables for each test area, along with maintenance activities. The RUR previously supported the Range Environmental Impact Analysis Process and Emergency Planning and Community Right-to-Know Act reporting. The RUR was designed to document the expendables deployed, who deployed them, and how the ranges were used with respect to environmental issues (U.S. Air Force, 2007).

TA C-74 Munitions Testing Capabilities

Test missions are missions designed to test, verify, validate, demonstrate, or prove that the new or improved hardware, system, software, or tactic will work safely and accomplish the desired effect. Testing is divided into five categories, with each category of testing performed at a specific location on the range. These testing categories and corresponding areas describe the types of activities that are performed at the TA C-74 Complex. The testers, number of missions, and the types and numbers of expendables are identified for each testing category (U.S. Air Force, 2007).

Kinetic Energy Munitions Facility (KEMTF)

The KEMTF is a 2,000-foot, dual rail sled track inclined to 0.6 percent upon which conventional munitions are accelerated to operational velocities by rocket power (Figure A-1 and Figure A-2). The track is used to evaluate the performance of conventional munitions in a dynamic environment. It accurately delivers a variety of munitions at the required velocity against targets of various sizes, shapes, and densities. The conventional munitions to be subjected to dynamic testing are accelerated on the track to operational velocities by rocket-powered sleds. A mobile, temperature conditioning capability located on the track controls the temperature of live, fuzed munitions. The track is inclined 0.343 degrees to the south. High-speed cameras and video are available to support missions (U.S. Air Force, 2007). Depending on mission complexity, the time required to prepare for a mission event can range from two days to 3.5 weeks (Prescott, 2014).

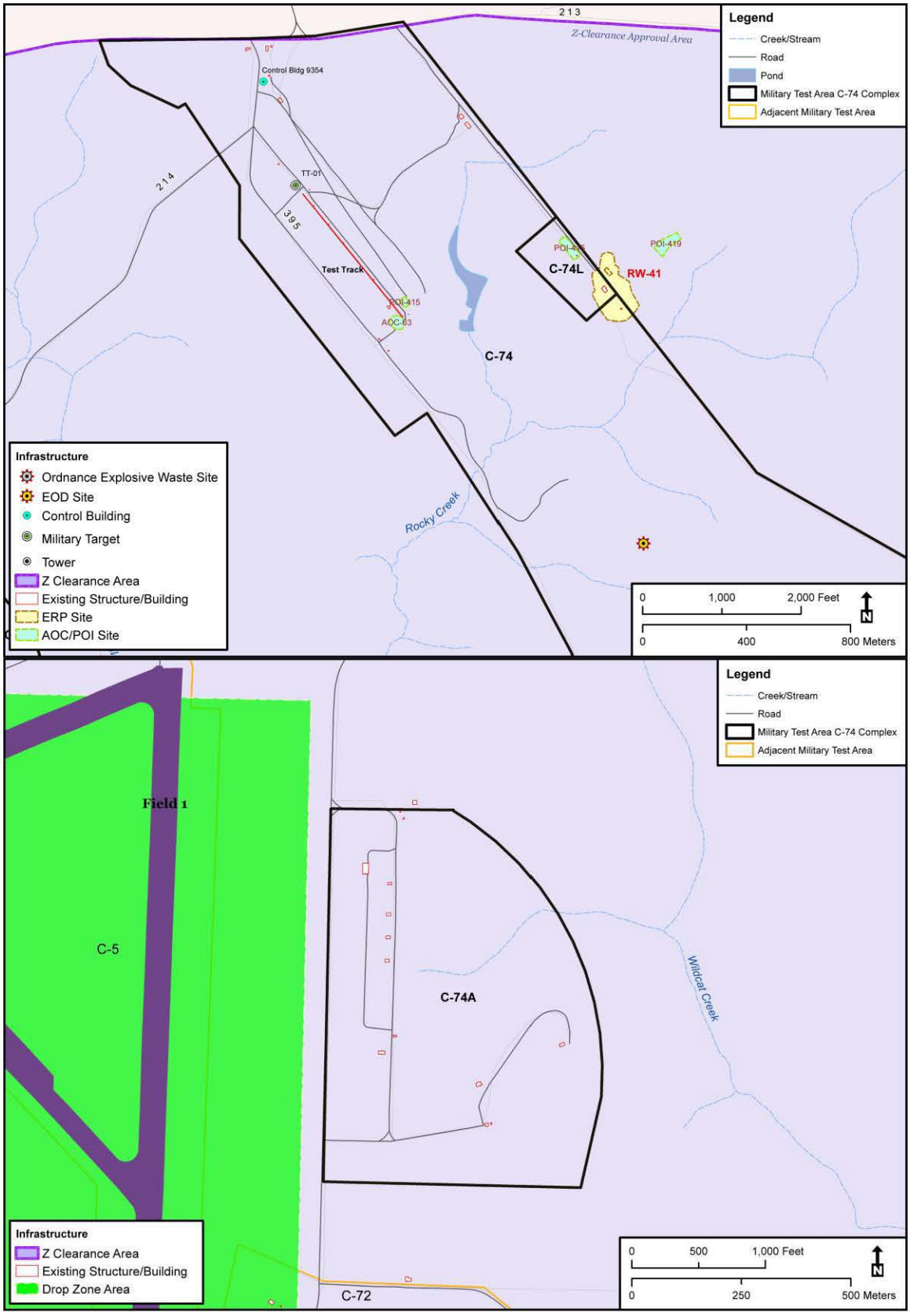

Figure A-1. TA C-74 Complex Infrastructure Features

Figure A-2. TA C-74 KEMTF Sled Track and Observation Tower

A variety of testing is performed under varying conditions and in different directions on the track. Sled track mission events primarily involve ballistics testing of live or inert munitions that are propelled down the track into a stationary target, usually at the southern end. Reverse ballistics testing can be done that involves the target being propelled into a stationary test item. Aeroballistics testing is when the test item is launched from the sled, and simulated dispersion testing is when the end of the track is elevated to propel the test item into the air at a known trajectory and into a target (Prescott, 2014; U.S. Air Force, 2005).

At the northern end of the track, TT-1 is constructed of reinforced concrete and consists of five rooms. One of the rooms within TT-1 is reusable and is the basis for why this target is more commonly known as the Reusable Target (RUT). The southeastern wall of the reusable room is positioned for impact by munitions propelled on the KEMTF and can be replaced after impact (U.S. Air Force, 2005).

On the southern end of the track, targets of varying sizes, shapes, and thicknesses including simulated walls, formed earth, and/or concrete slabs are lined up to the desired thickness and used as targets. Targets are specifically designed to the item under test. Reinforced concrete slabs (any thickness up to 10 feet) are poured on-site at the casting yard and can be positioned to simulate any hardened target. These concrete slabs often weigh as much as 160 tons and can be positioned next to each other if a greater thickness is needed. A 230-ton capacity crane is used to move the concrete targets. Expended slabs are broken up in the demolition yard and hauled off for recycling (Prescott, 2014).

A fixed, 100-foot instrumentation tower is located approximately 300 feet from the southeast impact area, allowing for close-in data collection. Most test items are released from the sled, propelled through targets, and land downrange. The items are recovered and analyzed at C-74A, Munitions Analysis Facility (U.S. Air Force, 2005 and 2007).

Test items may travel beyond the target a few hundred feet to over a mile downrange if there is a misfire. If an item lands on a slide slope in proximity to a stream, a cable is used to drag the item to flat area for retrieval. No wheeled or tracked vehicles are driven onto stream sideslopes to recover items. For heavier items that "plow" the ground, smoothing and recontouring practices are used to repair surface damage. Smaller, inert items near streams may be left in place if recovery is not required. Jackson Guard is contacted immediately if an item is located within a stream or wetland (Prescott, 2014).

Most of the tests at this facility are designed to duplicate or simulate the terminal effects of an air-launched munition. Generally, there are two categories: localized impact, such as impacting a bomb on a concrete or vehicle target, and wide impact area, such as delivering and detonating a bomb over a large ground surface (fuel air explosive and submunitions). Scale modeling of warhead sizes can be conducted to see if explosive properties could be simulated in smaller sizes to reduce the costs of running tests on typically large, expensive concrete targets. The delivery of munitions at a low level has been used to duplicate or simulate chemical dispersion of surface-to-surface weapons. For reverse ballistic simulation, the KEMTF has been used to push a small concrete slab target into the munition in order to not subject the munition to track vibration (Prescott, 2014; U.S. Air Force, 2007).

Other dynamic test types include low-level delivery moving target, aeroballistics, dispenser/submunition separation, aerosol warhead dispersion pattern, arena reverse ballistics, and recoverable sled tests. The sled track has a high capacity (200 shots per year, demonstrated) and can also be used to loft items downrange to test delivery of submunition with a 9-mile downrange footprint capability. Launch-loft capability allows the accurate delivery (both in required velocity and impact geometry) of a variety of munitions against targets of various sizes, shapes, and densities. Test items can be environmentally conditioned on the track (-65 degrees Fahrenheit (°F) to +160 °F) before firing, if desired (U.S. Air Force, 2007). TA C-74 KEMTF mission expenditures for fiscal years (FYs) 2012 and 2013 are presented in Table 2-1.

Gunnery Testing

Gun testing at TA C-74 falls into two categories. The first method requires shooting a gun at a target to analyze the munitions effects. This is only done at TA C-74 when the material/construction of the target would be appreciably easier at TA C-74 than at other ranges. The second method consists of firing a stimulant of a weapon under development from a specially built gun downward through concrete to test the stimulant's penetrating ability at different angles (U.S. Air Force, 2007).

The arena test encompasses a large variety of testing. These tests include bullet impact testing, slow/fast cook-off testing, warhead damage assessment against actual targets testing, and static detonation of an embedded/placed warhead. These tests usually require remote detonation and extensive instrumentation with camera and video coverage. Either the areas southeast or northwest from the ends of the sled track can be used (U.S. Air Force, 2007). The last gunnery test occurred in 2008 (Prescott, 2014). No TA C-74 gunnery testing expenditures were reported for FYs 2011 through 2014.

Static Munitions Testing

Within an area on the western side of C-74, the occasional test of static munitions occurs. For example, in late summer 2005, a 1,000-pound warhead was tested after being inserted into a drilled cavity within a 160-ton concrete block (U.S. Air Force, 2007). No static munitions testing expenditures were reported for FYs 2011 through 2014.

Explosive Ordnance Disposal Detonation Site

A field survey of TA C-74 identified an explosive ordnance disposal (EOD) site south of Rocky Creek (Figure A-1). The site is located approximately 300 feet off an unpaved road and comprises two pits that are used to detonate live warheads and other munitions used during KEMTF testing missions (Figure A-3). The estimated widths of the pits are 15 and 30 feet. The site is located on a hill terrace plateau with adjacent lands sloping toward the pits. No evidence of site-induced soil erosion was identified for hill slopes in proximity to the site. Both pits were rimmed with rill erosion and the larger of the two sites had a head cutting gully progressing toward the road (Figure A-4). No concentrations of detonation debris were identified. Detonations at the site range from 10 to 12 per year. Live munitions are detonated following each mission event and are not stored for later detonation with other items (Prescott, 2014). Reported EOD site expenditures for FYs 2012 and 2013 are presented in Table 2-1.

Figure A-3. TA C-74 EOD Site Detonation Pits

Figure A-4. TA C-74 EOD Site Pit Gully

TA C-74A Mission Capabilities

TA C-74A has facilities that are used to analyze the effects of impact on the internal condition of explosive munitions, high-explosive fill, and structures (Figure A-1). To accomplish this mission, C-74A uses nondestructive (X-ray) or destructive (sectioning) means. An industrial capacity hacksaw is used through remote control to section munitions up to 24 inches in diameter for analysis. The X-ray machine is housed in the range control building. C-74A is also used to temporarily store all of the test munitions that are to be expended on the Eglin Range. The few exceptions are those munitions developed by the High Explosives Research and Development (HERD) facility (U.S. Air Force, 2005).

TA C-74L Mission Capabilities

C-74L has been used to conduct gun and ammunition testing (automatic and single shot) with high explosive incendiary (HEI) rounds (Figure A-1). Gun/gun ammunition testing is testing of either a new or modified gun or testing the munitions fired by a gun. The most common testing was "life cycle" testing, which tests war reserve ammunition to ensure that it still meets specifications. War reserve ammunition routinely sits on shelves for many years, requiring periodic sampling to ensure its serviceability. The performance of guns, ballistic characteristics, and terminal effects of ammunition were analyzed. A concrete and steel backstop was used when testing the HEI so that the round will detonate upon impact with a target plate. TA C-74L was fully instrumented to record velocity, reaction time, temperature, spin-rate, pressure, accuracy, ballistics, and terminal effects (U.S. Air Force, 2005 and 2007). The testing gun was removed from C-74L in 2012 (Curry, 2014).

TA C-74 Complex Infrastructure

Buildings and Structures

The responsibility of building, structure, and instrumentation maintenance is shared by 96th Civil Engineer Group (96 CEG), 96th Test Wing/Technical Directorate/Range Services Division/Land Ranges (96 TW/TSR), and the Range Services division of the Range Operations and Maintenance (O&M) contractor. Buildings and structures on TA C-74 include an administrative building (9357), a control building (9354), three observational towers, the KEMTF (9351), gun

butt, and supporting track bunkers (Table A-1). Buildings and structures on TA C-74L include an observation tower (9370), a control and gunnery ballistics building (9372), and a concrete and steel gun butt backstop. TA C-74A contains multiple munitions storage igloos and bunkers, a range control building, munitions headquarters building (9531), an X-ray building, and the SAW facility (8954). Underground, 0.75-inch coaxial cables supply communication lines to all of the test sites. These cables are buried 3 to 4 feet underground. Fiber optic cables are gradually replacing the current coaxial cables. Additionally, one 120/208-volt, 400-hertz, three-phase power supply is also available (U.S. Air Force, 2007). TA C-74 Complex building and structures are presented in Figure A-1.

Table A-1. Buildings and Structures on TAs C-74, C-74L, and C-74A

Bldg. No.	Use
TA C-74	
9350	Metal Utility Shed
9351	Kinetic Energy Munitions Test Facility (i.e., Sled Track) (Inclined 0.343 degrees to the south)
9352	Chlorinator Well and Pump House
9354	Range Control Building
9357	Administrative Building
9371	Sled Preparation and Storage Building
9507	Instrumentation Bunker
9367	CZR Bunker* and Observation Tower (incl. antennae and lightening elimination system)
9374	100-foot Steel Observation Tower
9363	CZR Bunker* (currently houses instrumentation)
9364	
9506	Firing Bunker
9358	Track Bunker
9359	
9360	
9361	
	Gun Butt
TA C-74L	
9370	Observation tower
9372	Range Control and Gunnery Ballistics Building
9373	Pump House and Well
TA C-74A	
8954	Hacksaw (SAW) Facility
9530	Munitions HQ Building
9531	Pump House
9532	Control Building and X-ray Facility
9517	MLRS Butler Storage Building
9518	Munitions Storage Igloo
9519	
9520	
9521	Armament Research Test Building
9522	Pump House
9523	MLRS Rocket Test Concrete Pad
E-156	Storage Shed
E-176	Munitions Storage Bunker
E-177	
E-189	Guard Building

* CZR Bunker – Previously referred to high-speed cameras that were in the bunker. The cameras are no longer in the bunker (other instrumentation has replaced them), but the name CZR is still used to refer to the bunkers.

Targets

TA C-74 has one permanent, tactical target (TT-1) at the northern end of the sled track (Figure A-1). The target is a hardened complex with five rooms that is used in chemical/biological agent defeat testing (simulants are used) and to evaluate the effects of munitions being developed for use against hardened targets. One of the rooms within TT-1 is reusable and is more commonly known as the RUT (Table A-2). The southeastern wall of the reusable room can be impacted by munitions propelled on the KEMTF. After the munitions impact with the reusable wall, the wall can be removed and a new concrete wall can be welded into place (U.S. Air Force, 2007).

Other specific targets of varying size, shape, and density are developed and configured according to test mission needs. A target buildup area on TA C-74 is used for storing targets. Targets that have been used include aircraft wings and reinforced concrete blocks approximately 22 feet tall by 22 feet wide with varying thicknesses. The blocks are formed on the test area in the target block casting yard and stacked by an on-site crane at the end of the sled track in specific configurations required by a test mission. A target decommissioning area is also located on TA C-74 (U.S. Air Force, 2007).

Table A-2. Target TT-1 Description

Target	Description	Latitude (North)	Longitude (West)	High-Explosive Ordnance Allowed
TT-1 (RUT)	5-room structure, including the reusable room	30:41:14.085	86:19:46.3552	NA

NA = not applicable

Four utility poles, between which cloth can be strung, are located approximately 100–150 yards from the southern end of the sled track. The poles and target cloth are used as a target for specific gunnery test missions; however, they have not been used since 2004 (U.S. Air Force, 2007).

Roads

TA C-74 contains approximately 11.2 miles of unpaved road and 1.3 miles of paved road (Figure A-1). Road 213 is a paved road that provides access to the test area, classified as a primary road, which forms the northern boundary of the test area. Road 214, a paved primary road, provides access from Road 213 onto TA C-74 and then veers off the test area, providing access to TA C-74A, approximately 1 mile to the south. Branching off of Road 214 is Road 359, which is classified as secondary and located towards the western edge of the test area. Road 359 provides access downrange, crossing Rocky Creek and connecting to Road 407, a tertiary road that runs north to south at the southern end of TA C-74. Road 345, a paved secondary road, is located along the northern boundary of the test area and provides access to TA C-74L. Several other secondary and tertiary roads crisscross through TA C-74 providing shortcuts and access to less used portions of the test area (U.S. Air Force, 2007).

TA C-74A contains approximately 0.8 mile of paved road and 0.6 mile of unpaved road (Figure A-4). Road 214 is a paved primary road that runs along the half-mile western boundary

of TA C-74A. Of the paved portion, 0.15 mile is primary and 0.68 mile is secondary. All of the unpaved roads are secondary (U.S. Air Force, 2007).

Figure A-5. TA C-74 Unpaved Road

The primary and secondary roads on the test area are categorized as having high and medium-to-high usage. Road classification and usage categories are utilized by the 796 CES/CEOM to determine levels of road maintenance. Those roads categorized as primary are routinely (every five to six weeks) graded and repaired. Those classified as secondary are graded and repaired periodically (once every 6 to 12 months). Tertiary and unclassified roads are maintained on an as-needed basis and when requested by users (U.S. Air Force, 2007).

Action was taken on several test area roads to eliminate erosion that was causing sediment to enter Rocky Creek, which provides habitat for the federally threatened Okaloosa darter. Two roads were located in the southwestern portion of the test area, one along the southwestern boundary. Both roads were closed and the old roadbeds were revegetated. Where one of the roads crossed the southern tributary of Rocky Creek, the crossing was closed and rehabilitated. Drainage crossings and approaches along Road 359 underwent major reconstruction to reduce sediment entering Rocky Creek (Figure A-6 and Figure A-7). To accomplish these projects, funding from Air Force Materiel Command (AFMC) for threatened and endangered (T&E) species habitat restoration was utilized by Jackson Guard (96 CEG/CEIEA, Natural Resources Office). An additional AFMC funding source for this type of work is centered on wetland and riparian habitats (U.S. Air Force, 2007).

A field survey of TA C-74 in September 2014 identified maintenance issues for the improved unpaved road culvert crossing Rocky Creek. The downstream side of the crossing has been damaged by concentrated stormwater discharges during storms (Figure A-8) posing a safety hazard and potential source of sedimentation. The problem source is concentrated water flows within the roadway. The surface structure of both crossing road approaches has deteriorated resulting in the development of in-road ditches that follow vehicle tire paths down the road to discharge over the crossing. Traffic has displaced the unconsolidated road aggregate resulting in material accumulations in the middle and along the edges of the road (Figure A-9 and Figure A-10). Rather than running off the road, stormwater flows down the road to discharge into the stream at the crossing. As materials area dislodged and displaced the condition and stability of the road has quickly deteriorated. The extent of road damage and potential pollution

of the Okaloosa darter stream will continue unabated without intervention. Left untreated, the washout area will continue to expand, and eventually the crossing structure may succumb, resulting in catastrophic failure.

Figure A-6. TA C-74 Pre- and Post-Unpaved Road Reconstruction

Figure A-7. Rocky Creek Road Crossing Fill and Culverts

Figure A-8. Road Damage on the Downstream Side of the Rocky Creek Culvert Crossing

Figure A-9. Cross Section View of Road Deformation

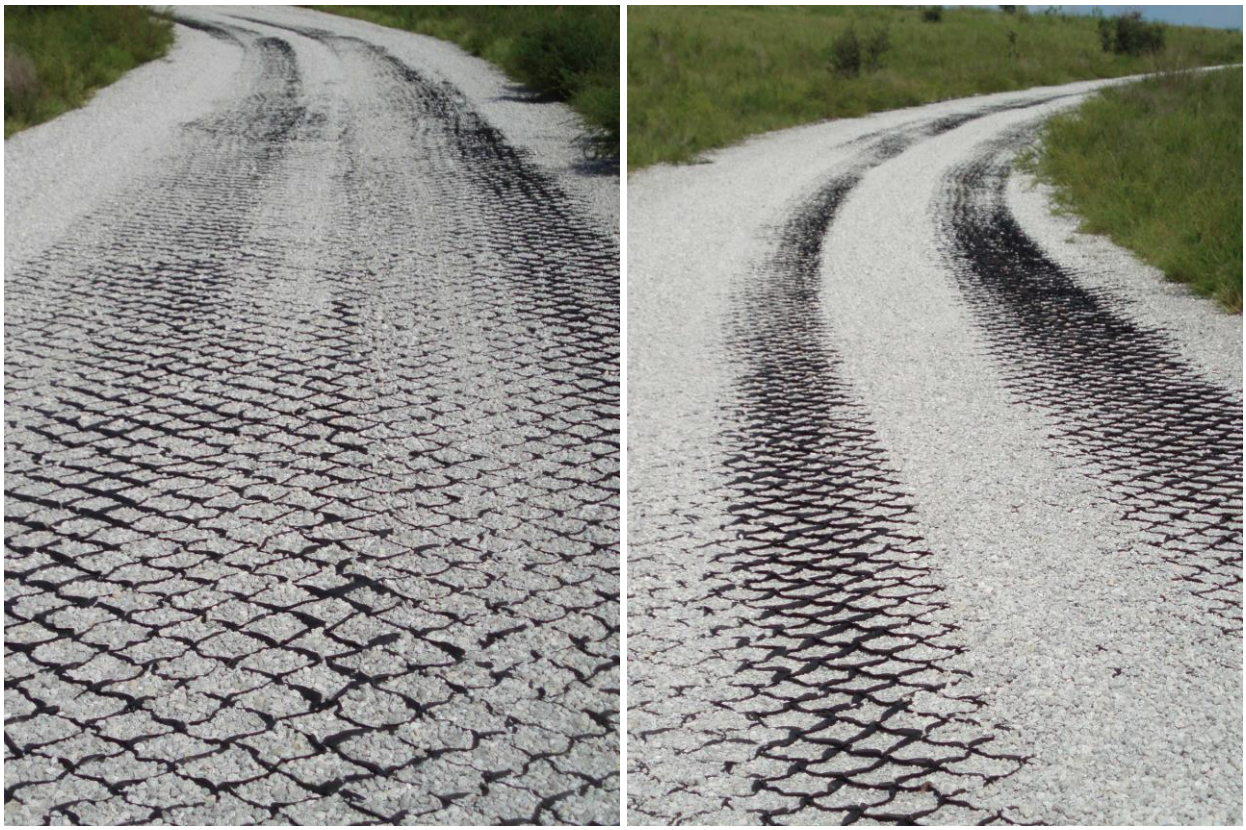

Figure A-10. Crossing Road Approach Damage Caused by Displacement of Surface Material

Instrumentation

Instrumentation on TA C-74 is centered on the sled track in the northern portion of the test area. Instrumentation on TA C-74L and TA C-74A is distributed throughout; however, these are much smaller test areas than the main TA C-74 (Figure A-1). The 96 TW/TSR is primarily responsible for maintaining instrumentation (U.S. Air Force, 2007).

TA C-74

- Four coordinate zero reference (CZR) ribbon frame ballistic cameras
- One programmable control system
- One magnetic pickup velocity measuring system
- Three closed-circuit television (CCTV) systems for monitoring launch, impact, and surveillance of clear area for recovery of sled parts
- Mobile temperature conditioning system
- One sled performance analysis system

TA C-74A

- One 6-mega-electron-volt X-ray machine
- One remote control power hacksaw (referred to as the SAW)
- One CCTV system for monitoring power hacksaw operations

TA C-74L

- One CCTV system for gun firings
- One gun-firing console
- One gun range instrumentation mobile van for data collection and processing

Vegetation Maintenance – Roller-Drum Chopping

A vegetation management practice that is no longer conducted on Eglin TA lands is roller drum chopping. Beginning in the 1970s, this practice was used for decades along with bush hogging to minimize the growth of open grassland-shrubland woody species. It is estimated that this practice was excluded from use on TA C-74 in the late 1990s (Prescott, 2014). A typical roller drum chopper consisted of a set of three water-filled drums arranged in tandem and pulled by an eight-wheel drive, 290-horsepower tractor. Each drum contained up to 12 blades arranged in a circle that measured 6 feet in diameter and weighed 5 to 8 tons. The roller drum blades chopped into the soil an average of 6 inches. In addition to chopping plant biomass, this practice created extensive ground disturbance that degraded plant ground cover and exposed soils.

Figure A-11. Test Area Tractor and Roller Drum Chopper

Figure A-12. Comparison of Eglin AFB Test Area Ground Disturbance Effects of Roller Drum Chopping: Non-Roller Drum Chopped (left side) and Roller Drum Chopped (right side)

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APPENDIX B

RELEVANT LAWS, REGULATIONS, AND POLICIES

ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing materials
AFB	Air Force Base
AFI	Air Force Instruction
AFPD	Air Force Policy Directive
AICUZ	Air Installation Compatible Use Zone Program
ARPA	Archaeological Resources Protection Act of 1979
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
CAA	Clean Air Act
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	decibels
DoD	Department of Defense
DODI	Department of Defense Instruction
EIAP	Environmental Impact Analysis Process
EPCRA	Emergency Planning and Community Right-to-Know Act
ETTC	Eglin Test and Training Complex
F.S.	Florida Statute
FAC	Florida Administrative Code
FAR	Federal Aviation Regulation
FWPCA	Federal Water Pollution Prevention and Control Act
INRMP	Integrated Natural Resources Management Plan
MBTA	Migratory Bird Treaty Act
MCLs	maximum contaminant levels
MMPA	Marine Mammal Protection Act of 1972, as amended
MOU	Memorandum of Understanding
MSDS	Material Safety Data Sheet
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act of 1991
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OSHA	Occupational Safety and Health Administration
PSD	Prevention of Significant Deterioration
SFAR	Supplement to Federal Aviation Regulation
USC	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

RELEVANT LAWS, REGULATIONS, AND POLICIES

The Range Environmental Assessment was prepared with consideration and compliance of relevant environmental laws, regulations, and policies; including federal and state laws and regulations, Department of Defense (DoD) directives, and Air Force instructions. A brief description of specific laws and regulations that legally define issues of compliance associated with the mission activities of this document are outlined below.

General

42 United States Code (USC) 4321 et seq; 1969; National Environmental Policy Act of 1969 (NEPA); Requires that federal agencies (1) consider the consequences of an action on the environment before taking the action and (2) involve the public in the decision making process for major federal actions that significantly affect the quality of the human environment.

Executive Order 12372; 14-Jul-82; Intergovernmental Review of Federal Programs; Directs federal agencies to inform states of plans and actions, use state processes to obtain state views, accommodate state and local concerns, encourage state plans, and coordinate states' views.

Executive Order 12856; 3-Aug-93; Right to Know Laws and Pollution Prevention Requirements; Directs all federal agencies to incorporate pollution planning into their operations and to comply with toxic release inventory requirements, emergency planning requirements, and release notifications requirements of Emergency Planning and Community Right-to-Know Act (EPCRA).

Executive Order 12898; 11-Feb-94; Environmental Justice; Directs federal agencies to identify disproportionately high and adverse human health or environmental impacts resulting from programs, activities, or policies on minority populations.

Air Force Instruction 13-212; 16-Nov-07 (incorporating change 10-Jul-08; certified current 9-Aug-12 (incorporates ANG supplement)); Range Planning and Operations; Establishes procedures for planning, construction, design, operation, and maintenance of weapons ranges as well as defines weapons safety footprints, buffer zones, and safest procedures for ordnance and aircraft malfunction.

Eglin Air Force Base (AFB) Instruction 13-212; 20-Dec-10; Range Planning and Operations; Implements Air Force Policy Directive (AFPD) 13-2, *Air Traffic, Airfield, Airspace, and Range Management* and sets forth policies regarding the Eglin Test and Training Complex (ETTC) activities of all personnel (all Active Duty, Civilians, Guard, Reserves, Contractors, etc.) executing official business on the range and meets the requirements identified in Air Force Instruction (AFI) 13-212, *Range Planning and Operations*.

Air Force Policy Directive 32-70; 20-Jul-94; Environmental Quality; Develops and implements the Air Force Environmental Quality Program composed of cleanup, compliance, conservation, and pollution prevention.

Air Force Instruction 90-803; 11-Feb-13; Environmental, Safety, and Occupational Health Compliance Assessment and Management; Implements AFPD 90-8 by providing guidance for establishing an assessment process designed to ensure compliance with federal, state, and local

environmental laws, Occupational Safety and Health Administration (OSHA) regulations, as well as DoD, and Air Force policies and instructions.

32 Code of Federal Regulations (CFR) 989; 1-Jul-11; Environmental Impact Analysis Process (EIAP); This regulation provides a framework for how the Air Force is to comply with NEPA and the Council on Environmental Quality regulations.

Air Force Instruction 32-7062; 27-June-13 (supersedes AFI 32-7062, 1-Oct-97); Air Force Comprehensive Planning; Implements AFPD 32-70 by establishing Air Force Comprehensive Planning Program for development of Air Force installations, ensuring that natural, cultural, environmental, and social science factors are considered in planning and decision making.

Physical Resources

Air Quality

42 USC 7401 et seq.; 40 CFR Parts 50, 51 and 58; Clean Air Act, National Ambient Air Quality Standards (CAA, NAAQS); Ambient Air Quality Surveillance. Emission sources must comply with air quality standards and regulations established by federal, state, and local regulatory agencies.

Air Force Policy Directive 32-70; 20-Jul-94; Environmental Quality; Develops and implements the Air Force Environmental Quality Program composed of cleanup, compliance, conservation, and pollution prevention.

Air Force Instruction 32-7040; 30-Oct-13; Air Quality Compliance and Resource Management; This AFI sets forth actions for bases to implement to achieve and maintain compliance with applicable standards for air quality compliance, and responsibilities for who is to implement them. Includes requirements for NEPA and the Resource Conservation and Recovery Act of 1976, as well as the CAA.

Florida Statute (F.S.) Chapter 403, Part I; Florida Air and Water Pollution Control Act; Regulates air pollution within the state.

Florida Administrative Code (FAC) Chapter 62-204; Repealed 16-Feb-12; Florida State Implementation Plan, with Ambient Air Quality Standards and Prevention of Significant Deterioration (PSD) Program; Establishes state air quality standards and requirements for maintaining compliance with NAAQS.

FAC Chapter 62-213; Operation Permits for Major Sources of Air Pollution; Adopted PSD permit program, designed to control the impact of economic growth on areas that are already in attainment.

Air Space Use

49 USC 106 & Subtitle VII; 2011; Federal Aviation Act of 1958; Created the Federal Aviation Administration and establishes the administrator with the responsibility of ensuring aircraft safety and efficient utilization of the National Airspace System.

14 CFR Part 71; 1-Jan-11; Federal Aviation Regulation (FAR); Defines federal air routes, controlled airspace, and flight locations for reporting position.

14 CFR Part 73; 1-Jan-11; Federal Aviation Regulation (SFAR No. 53); Defines and prescribes requirements for special use airspace.

14 CFR Part 91; 1-Jan-11; FAR; Governs the operation of aircraft within the United States, including the waters within 3 nautical miles of the U.S. Coast. In addition, certain rules apply to persons operating in airspace between 3 and 12 nautical miles from the U.S. Coast.

Land Resources

16 USC 670a to 670o; 1997; Sikes Act, Conservation Programs on Military Reservations; DoD, in a cooperative plan with the Department of the Interior and Department of State, opens Air Force bases to outdoor recreation, provides the state with a share of profits from sale of resources (timber), and conserves and rehabilitates wildlife, fish, and game on each reservation. The Air Force is to manage the natural resources of its reservations to provide for sustained multipurpose use and public use.

16 USC 1451 to 1466; 1997; Coastal Zone Management Act of 1972 (CZMA); Federal agency activities in coastal zones should be consistent with state management plans to preserve and protect coastal zones. Lands for which the federal government has sole discretion or holds in trust are excluded from the coastal zone.

USC 1701 et seq., Public Law 94-579; October 2001; Federal Land Policy and Management Act of 1976; Provides that the Sec. of Interior shall develop land use plans for public lands within Bureau of Land Management (BLM) jurisdiction to protect scientific, scenic, historical, ecological, environmental and archeological values, and to accommodate needs for minerals, food, and timber.

16 USC 3501 to 3510; 2011; Coastal Barrier Resources Act; Limits federal expenditure for activities on areas within the Coastal Barrier Resources System. An exception is for military activities essential to national security, after the federal agency consults with the Secretary of the Interior.

Air Force Instruction 32-7062; 27-June-13 (supersedes AFI 32-7062, 1-Oct-97); Air Force Comprehensive Planning; Implements AFPD 32-70 by establishing Air Force Comprehensive Planning Program for development of Air Force installations, ensuring that natural, cultural, environmental, and social science factors are considered in planning and decision making.

Air Force Instruction 32-7063; 13-Sep-05 (certified current 17-Nov-09); Air Installation Compatible Use Zone Program (AICUZ); Provides a framework to promote compatible development within area of AICUZ area of influence and protect Air Force operational capability from the effects of land use that are incompatible with aircraft operations.

Air Force Instruction 32-7064; 17-Sep-04; Integrated Natural Resources Management; Provides for development of an integrated natural resources management plan to manage the installation ecosystem and integrate natural resources management with the rest of the installation's mission; includes physical and biological resources and uses.

Noise

42 USC 4901 to 4918, Public Law 92-574; 1972; Noise Control Act of 1972; Provides that each federal agency must comply with federal, state, interstate, and local requirements for control and abatement of environmental noise.

49 USC 44715; 1997; Controlling Aircraft Noise and Sonic Boom; Provides that the Federal Aviation Administration will issue regulations in consultation with the U.S. Environmental Protection Agency (USEPA) to control and abate aircraft noise and sonic boom.

Executive Order 12088; 1978; Federal Compliance with Pollution Control Standards; Requires the head of each executive agency to take responsibility for ensuring all actions have been taken to prevent, control, and abate environmental (noise) pollution with respect to federal activities.

Air Force Instruction 32-7063; 13-Sep-05 (certified current 17-Nov-09); AICUZ; The AICUZ study defines and maps noise contours. Update when noise exposure in air force operations results in a change of Day-Night Average Sound Level of 2 decibels (dB) or more as compared to the noise contour map in the most recent AICUZ study.

Water Resources

33 USC 426, 577, 577a, 595a; 1970; River and Harbor Act of 1970; Keeps navigable waterways open, authorizing the U.S. Army Corps of Engineers to investigate and control beach erosion and to undertake river and harbor improvements.

33 USC 1251 et seq.; 1997; Clean Water Act (CWA) (Federal Water Pollution Prevention and Control Act (FWPCA); In addition to regulating navigable water quality, the CWA establishes National Pollutant Discharge Elimination System (NPDES) permit program for discharge into surface waters and stormwater control; U.S. Army Corps of Engineers permit and state certification for wetlands disturbance; regulates ocean discharge; sewage wastes control; and oil pollution prevention.

33 USC 1344-Section 404; 1997; FWPCA/CWA, Dredged or Fill Permit Program; Regulates development in streams and wetlands by requiring a permit from the U.S. Army Corps of Engineers for discharge of dredged or fill material into navigable waters. A Section 401 (33 USC 1341) Certification is required from the State as well.

42 USC 300f et seq.; 1997; Safe Drinking Water Act; USEPA; Requires the promulgation of drinking water standards, or maximum contaminant levels (MCLs), which are often used as cleanup values in remediation; establishes the underground injection well program; and establishes a wellhead protection program.

42 USC 6901 et seq.; 29-May-05; Resource Conservation and Recovery Act of 1976 (RCRA); Establishes standards for management of hazardous waste so that water resources are not contaminated: RCRA Corrective Action Program requires cleanup of ground water that has been contaminated with hazardous constituents.

42 USC 9601 et seq., Public Law 96-510; 11-Dec-80; Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA); Establishes the emergency

response and remediation program for water and ground water resources contaminated with hazardous substances.

Air Force Policy Directive 32-70; 20-Jul-94; Environmental Quality; Develops and implements the Air Force Environmental Quality Program composed of cleanup, compliance, conservation, and pollution prevention. Implements CWA, Safe Drinking Water Act, and Water Quality Act of 1987.

Air Force Instruction 32-7041; 10-Dec-03 (certified current 28-Jan-10); Water Quality Compliance; Instructs the Air Force on maintaining compliance with the CWA; other federal, state, and local environmental regulations; and related DoD and Air Force water quality directives.

Air Force Instruction 32-7041, Eglin AFB Supplement; 16-Jun-10; Water Quality Compliance; This supplement applies to all units assigned or attached to Eglin AFB, to include any associate/tenant organizations and off-base and remote site units. This supplement should be read in conjunction with AFI 32-7041, Water Quality Compliance.

Air Force Instruction 32-7064; 217-Sep-04; Integrated Natural Resources Management; Sets forth requirements for addressing wetlands, floodplains and coastal and marine resources in an integrated natural resources management plan (INRMP) for each installation.

F.S. Chapters. 253, 258; Florida Aquatic Preserves Act; Establishes state aquatic preserves.

F.S. Chapter 403, Part I; Florida Air and Water Pollution Control Act; establishes the regulatory system for water resources in the State of Florida.

FAC Chapter 62-302; Surface Water Quality Standards; Classify Florida surface waters by use. Identify Outstanding Florida Waters.

FAC Chapter 62-312; Florida Dredge and Fill Activities; Requires a State permit for dredging and filling conducted in, on, or over the surface waters of the State.

Biological Resources

Animal Resources

16 USC 668 to 668d; 1995; Bald and Golden Eagle Protection Act (BGEPA); Makes it illegal to take, possess, sell, barter, offer to sell, transport, export or import Bald and Golden eagles in the United States. Taking may be allowed for scientific, exhibition, or religious purposes, or for seasonal protection of flocks.

16 USC 703 - 712; 1997; Migratory Bird Treaty Act (MBTA); Makes it illegal to take, kill or possess migratory birds unless done so in accordance with regulations. An exemption may be obtained from the Department of the Interior for taking a listed migratory bird.

16 USC 1361 et seq.; 1997; Marine Mammal Protection Act of 1972, as amended (MMPA); Makes it illegal for any person to "take" a marine mammal, which term includes significantly disturbing a habitat, unless activities are conducted in accordance with regulations or a permit.

Air Force Instruction 32-7064; 17-Sep-04; Integrated Natural Resources Management; Explains how to manage natural resources on Air Force property, and to comply with federal, state, and local standards for resource management.

Executive Order 13112; 1999; Instructs federal agencies to monitor for, control, and prevent the introduction of nonnative, invasive species of plants and animals.

Executive Order 13186; 2001; Directs federal agencies whose actions may affect migratory birds to establish and implement a Memorandum of Understanding with the U.S. Fish and Wildlife Service (USFWS) to promote the conservation of migratory birds.

DoD and USFWS Memorandum of Understanding (MOU); 31-Jan-06; Requires the DoD to acquire permits for normal and routine operations, such as installation support functions, that may result in pursuit, hunting, taking, capturing, killing, possession, or transportation of any migratory bird.

50 CFR 21; 2007; Exempts the Armed Forces from the incidental taking of migratory birds during military readiness activities, except in cases where an activity would likely cause a significant adverse effect on the population of a migratory bird species. In this situation, the Armed Forces, in cooperation with the USFWS, must develop and implement conservation measures to mitigate or minimize the significant adverse impacts.

Threatened & Endangered Species

16 USC 1361 et seq., Public Law 92-574; 1997; MMPA; Makes it illegal for a person to "take" a marine mammal, which term includes significantly disturbing the habitat, unless done in accordance with regulations or a permit.

16 USC 1531 to 1544-16 USC 1536(a); 1997; ESA; Federal agencies must ensure their actions do not jeopardize the continued existence of any endangered or threatened species or destroy or adversely modify the habitat of such species and must set up a conservation program.

50 CFR Part 402; Endangered Species Act Interagency Cooperation; These rules prescribe how a federal agency is to interact with either the USFWS or the National Marine Fisheries Service in implementing conservation measures or agency activities.

50 CFR Part 450; Endangered Species Exemption Process; These rules set forth the application procedure for an exemption from complying with Section 7(a)(2) of the ESA, 16 USC 1536(a)(2), which requires that federal agencies ensure their actions do not affect endangered or threatened species or habitats.

Air Force Policy Directive 32-70; 20-Jul-94; Environmental Quality; Develops and implements the Air Force Environmental Quality Program composed of cleanup, compliance, conservation, and pollution prevention. Implements Endangered Species Act.

Air Force Instruction 32-7064; 17-Sep-04; Integrated Natural Resources Management; This AFI directs an installation to include in its INRMP procedures for managing and protecting endangered species or critical habitat, including state-listed endangered, threatened, or rare species; and discusses agency coordination.

Human Safety

29 CFR 1910.120; Occupational Safety and Health Act, Chemical Hazard Communication Program (OSHA); Requires that chemical hazard identification, information and training be available to employees using hazardous materials and institutes material safety data sheets (MSDS), which provide this information.

Department of Defense Instruction 6055.01; 14-Oct-14; Establishes occupational safety and health guidance for managing and controlling safety risks and health hazards.

Department of Defense Flight Information Publication; Identifies regions of potential hazard resulting from bird aggregations or obstructions, military airspace noise sensitive locations, and defines airspace avoidance measures.

Air Force Instruction 13-212. Certified current 06 January 2010; Range Planning and Operation; Establishes procedures for planning, construction, design, operation, and maintenance of weapons ranges as well as defines weapons safety footprints, buffer zones, and safest procedures for ordnance and aircraft malfunction.

Eglin Air Force Base Instruction 13-212. 20 December 2010; Implements AFPD 13-2, Air Traffic, Airfield, Airspace, and Range Management. This Directive sets forth policies regarding the ETTC activities of all personnel (all active duty, civilians, Guard, Reserves, contractors, etc.) executing official business on the range and meets the requirements identified in AFI 13-212, Range Planning and Operations.

Air Force Instruction 32-2001; 27-Feb-14; supersedes 9-Sep-08; Fire Emergency Services Program; Identifies requirements for Air Force fire protection programs (equipment, response time, and training).

Air Force Instruction 32-7063; 13-Sep-05 (certified current 17-Nov-09); AICUZ. The AICUZ Study defines and maps accident potential zones and runway clear zones around the installation, and contains specific land use compatibility recommendations based on aircraft operational effects and existing land use, zoning and planned land use.

Air Force Manual 91-201; 12-Jan-11; Explosives Safety Standards; Regulates and identifies procedures for explosives safety and handling as well as defining requirements for ordnance quantity distances, safety buffer zones, and storage facilities.

Air Force Guidance Memorandum to AFI 91-203; Air Force Consolidated Occupational Safety Instruction; 19-Aug-14; supersedes AFI 91-203; Provides guidance on following OSHA and Air Force safety standards.

Habitat Resources

Executive Order 11990; 24-May-77; Protection of Wetlands; Requires federal agencies to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands in their activities. Construction is limited in wetlands and requires public participation.

Executive Order 11988; 24-May-77; Floodplain Management; Directs federal agencies to restore and preserve floodplains by performing the following in floodplains: not supporting development; evaluating effects of potential actions; allowing public review of plans; and considering in land and water resource use.

Air Force Policy Directive 32-70; 20-Jul-94; Environmental Quality; Develops and implements the Air Force Environmental Quality Program composed of cleanup, compliance, conservation, and pollution prevention. Implements Executive Order 11988 and 11990.

Anthropogenic Resources

Hazardous Materials

7 USC 136 et seq., Public Law 92-516; 1997; Federal Insecticide, Fungicide, and Rodenticide Act Insecticide and Environmental Pesticide Control; Establishes requirements for use of pesticides that may be relevant to activities at Eglin AFB.

42 USC Sect. 2011 - Sect. 2259; Atomic Energy Act; Assure the proper management of source, special nuclear, and byproduct material.

42 USC 6901 et seq.; 1980; RCRA and Solid Waste Disposal Act of 1980; Subchapter III sets forth hazardous waste management provisions; Subchapter IV sets forth solid waste management provisions and Subchapter IX sets forth underground storage tank provisions with which federal agencies must comply.

42 USC 9601 et seq., Public Law 96-510; 1997; CERCLA; Establishes the liability and responsibilities of federal agencies for emergency response measures and remediation when hazardous substances are or have been released into the environment.

42 USC 11001 to 11050; EPCRA; Provides for notification procedures when a release of a hazardous substance occurs; sets up community response measures to a hazardous substance release; and establishes inventory and reporting requirements for toxic substances at all facilities.

42 USC 13101 to 13109; 1990; Pollution Prevention Act of 1990; Establishes source reduction as the preferred method of pollution prevention, followed by recycling, treatment, then disposal into the environment; establishes reporting requirements to submit with EPCRA reports. Federal agencies must comply.

Air Armament Center Plan 32-3; January 2004; Asbestos Management Plan; This plan establishes procedures for the Eglin AFB facility asbestos management program. It contains the policies and procedures used in controlling the health hazards created by asbestos containing materials (ACM), and the procedures used in ACM removal required to protect the health of personnel and to comply with applicable federal, state, and Air Force laws and inspections.

Air Armament Center Plan 32-4; January 2004. Lead-Based Paint Management Plan; This plan establishes procedures for the Eglin AFB lead-based paint management program. It contains policies and procedures used in controlling health hazards from exposure to lead-based paint.

Air Armament Center Plan 32-7; February 2003; Integrated Solid Waste Management Plan; The Eglin AFB Integrated Solid Waste Management Plan documents guidance and procedures with regard to regulatory compliance in the handling, reduction, recycling and disposal of solid waste. It contains requirements necessary to reach the mandated incremental waste diversion goal of 40-percent diversion of municipal solid waste from landfill disposal by fiscal year 2005. These policies and procedures are designed to preserve landfill space, increase recycling and reuse, address revenues and cost avoidance, provide pollution prevention alternatives and promote Affirmative Procurement. This plan draws from the aspects of two programs, the Integrated Solid Waste Management Program and the Qualified Recycling Program.

Air Armament Center Plan 32-9; February 2003; Hazardous Materials Management Plan; The Eglin AFB Hazardous Material Management Plan documents existing policy and procedures for organizations requesting, procuring, issuing, handling, storing and disposing of hazardous material in accomplishment of the Air Armament Center mission. These policies provide guidance for compliance with federal, state, and local occupational safety, health, and environmental regulations.

Air Force Policy Directive 32-70; 20-Jul-94; Environmental Quality; Provides for developing and implementing an Air Force Environmental Quality Program composed of four pillars: cleanup, compliance, conservation and pollution prevention. Implements Resource Recovery and Conservation Act, Comprehensive Environment Response Compensation and Liability Act of 1980, EPCRA, Pollution Prevention Act, Executive Order 12088, Executive Order 12777, and Executive Order 12586. Implements DoD Instruction 4120.14, DoD Directive 4210.15, and DoD Directive 5030.41.

Eglin AFB Instruction 32-7003; 1-Nov-2010; Hazardous Waste Management; This instruction is intended to provide a framework for complying with environmental standards applicable to Hazardous Waste, Universal Waste, Special Waste, and used petroleum products on Eglin AFB.

Air Force Instruction 32-7020; 7-Feb-01; The Environmental Restoration Program; Introduces the basic structure and components of a cleanup program under the Defense Environmental Restoration Program; sets forth cleanup program elements, key issues, key management topics, objectives, goals, and scope of the cleanup program.

Air Force Instruction 32-7042; 15-Apr-09 (incorporating change 31-Mar-10); Waste Management; Provides that each installation must develop a hazardous waste and a solid waste management plan; characterize all hazardous waste streams; and dispose of them in accordance with the AFI. Plans must address pollution prevention as well.

Air Force Instruction 32-7042, Eglin AFB Supplement; 28-Jan-10; Waste Management; Serve as the Solid Waste Management plan required by AFI 32-7042, *Solid and Hazardous Waste Compliance,* and applies to all agencies and organizations on Eglin AFB, all personnel living in military family housing and contractors performing work under government contracts. Although the parent AFI also addresses hazardous waste, this supplement concerns only non-hazardous solid waste.

Air Force Instruction 32-7001; 4-Nov-11; Environmental Management; supersedes AFI 32-7001; AFI 32-7006 and AFI 32-7080; Establishes the framework for an Environmental

Management System at Headquarters, United States Air Force, major commands, and at installations.

Air Force Policy Directive 40-2; 15-Mar-07; Radioactive Materials; Establishes policy for control of radioactive materials, including those regulated by the U.S. Nuclear Regulatory Commission, but excluding those used in nuclear weapons.

Cultural Resources

16 USC 431 et seq.; PL 59-209; 34 Stat. 225; 43 CFR 3; 1906; Antiquities Act of 1906; Provides protection for archeological resources by protecting all historic and prehistoric sites on Federal lands. Prohibits excavation or destruction of such antiquities without the permission (Antiquities Permit) of the Secretary of the department that has the jurisdiction over those lands.

16 USC 461 to 467; 1997; Historic Sites, Buildings and Antiquities Act; Establishes national policy to preserve for public use historic sites, buildings, and objects of national significance; the Secretary of the Interior operates through the National Park Service to implement this national policy.

16 USC 469 to 469c-1; 1997; Archaeological and Historic Preservation Act of 1974; Directs federal agencies to give notice to the Secretary of the Interior before starting construction of a dam or other project that will alter the terrain and destroy scientific, historical or archeological data, so that the Secretary may undertake preservation.

16 USC 470aa-470mm, Public Law 96-95; 1997-Supp; Archaeological Resources Protection Act of 1979 (ARPA); Establishes permit requirements for archaeological investigations and ensures protection and preservation of archaeological sites on federal and tribal lands. ARPA sets descriptions of prohibited activities in regard to cultural resources and provides financial and incarceration penalties for convicted violators.

16 USC 470 to 470w-6-16 USC 470f, 470h-2; 1997-Supp; National Historic Preservation Act (NHPA); The NHPA is our nation's keystone federal law for historic preservation. Section 106 of NHPA is a planning process that requires federal agencies to take into account the effects of their actions on historic properties, and provide Advisory Council on Historic Preservation (ACHP) with a reasonable opportunity to comment on those actions. Section 106 regulations explicitly address NEPA (see 36 CFR § 800.8).

25 USC 3001–3013), (Public Law 101-601); 1997-Supp; Native American Graves Protection and Repatriation Act of 1991 (NAGPRA); provides for the rights of Native American lineal descendants, Indian tribes, and Native Hawaiian organizations with respect to the treatment, repatriation, and disposition of Native American human remains, funerary objects, sacred objects, and objects of cultural patrimony, with which they can show a relationship of lineal descent or cultural affiliation.

42 USC 1996; 1994; American Indian Religious Freedom Act; Federal agencies are to make reasonable efforts to accommodate access to sites, use and possession of sacred objects, and the freedom to worship through ceremonial and traditional rites in the practice of their traditional religions.

32 CFR Part 200; 1996; Protection of Archaeological Resources: Uniform Regulations; Implements ARPA; provides that no person may excavate or remove any archaeological resource located on public lands or Indian lands unless such activity is conducted pursuant to a permit issued under this Part or is exempted under this Part.

36 CFR Part 60; 1996; Nominations to National Register of Historic Places (NRHP); Details how the federal agency Preservation Officer is to nominate properties to the National Park Service for consideration to be included on the NRHP.

36 CFR Part 800; 5-Aug-04; Protection of Historic and Cultural Properties; Sets out the requirements of Section 106 of the NHPA: under these regulations federal agencies must take into account the effects of their undertakings on historic properties and afford the ACHP a reasonable opportunity to comment on such undertakings.

Executive Order 11593, 16 USC 470; 13-May-71; Protection and Enhancement of the Cultural Environment; Instructs federal agencies to identify and nominate historic properties to the NRHP, as well as avoid damage to historic properties eligible for the NRHP.

Executive Order 13007; 24-May-96; Directs federal agencies to provide access to and ceremonial use of sacred Indian sites by Indian religious practitioners as well as promote the physical integrity of sacred sites.

DoD Directive, DoD Instruction (DODI) 4715.16; 18-Sept-08; Cultural Resources Management; This DoDI establishes DoD policy and assigns responsibilities for DoD components (identified in the DoDI) to comply with applicable federal statutory and regulatory requirements, Executive Orders, and Presidential memorandums for the integrated management of cultural resources on DoD-managed lands.

DoD Directive, DoDI 4710.02; 14-Sep-06; DoD; Interactions with Federally-Recognized Tribes: This DoDI implements DoD policy, assigns responsibilities, and provides procedures for DoD branches' interactions with federally recognized tribes.

Air Force Instruction 32-7065; 1-Jun-04; Cultural Resource Management Program; Directs Air Force bases to comply with historic preservation requirements, and describes Air Force organizational responsibilities. The AFI provides guidance for principal actions associated with cultural resources compliance: Inventory, Project Review, and General Management.

Air Force Manual 126-5, Natural Resources, Outdoor Recreation, and Cultural Values; provides guidance, standards, and technical information on management of natural resources, outdoor recreational resources, and cultural resources.

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APPENDIX C

SENSITIVE WILDLIFE SPECIES

ACRONYMS AND ABBREVIATIONS

AFB	Air Force Base
CFR	Code of Federal Regulations
dbh	diameter at breast height
ESA	Endangered Species Act
GIS	geographic information system
INRMP	Integrated Natural Resources Management Plan
MBTA	Migratory Bird Treaty Act
PBGs	Potential Breeding Groups
RCW	red-cockaded woodpecker
USFWS	U.S. Fish and Wildlife Service

INTRODUCTION

Sensitive species include those species that are (1) listed as endangered, threatened, or as candidate species under the Endangered Species Act (ESA); (2) listed as endangered, threatened, or as species of special concern by the state of Florida; or (3) protected under the Migratory Bird Treaty Act (MBTA). The MBTA provides for the conservation of migratory birds, which are defined as any species or family of birds that live, reproduce, or migrate within or across international borders at some point during their annual life cycle. Unless permitted, the MBTA prohibits the taking of migratory birds. The U.S. Fish and Wildlife Service (USFWS) published a rule authorizing incidental take of migratory birds during military readiness activities in 2007. If such activities may result in a significant adverse effect on a population of a migratory bird species, the action proponent must confer with the USFWS to develop mitigation measures. A "significant adverse effect" is defined as an effect that could diminish the capacity of a population of migratory bird species to sustain itself at a biologically viable level. A population is "biologically viable" when its ability to maintain its genetic diversity, to reproduce, and to function effectively in its native ecosystem is not significantly harmed.

In 1991, the Air Force signed a Memorandum of Agreement to participate in the USFWS Federal Neotropical Migratory Bird Conservation Program, which promotes and protects neotropical birds and their habitats. Many neotropical migrant birds use high quality sandhills habitat on the installation. Typical species include ruby-throated hummingbird (*Archilochus colubris*), summer tanager (*Piranga rubra*), and common yellowthroat (*Geothlypis trichas*), among others. Riparian areas and bottomland hardwood swamps may be the most important habitats for neotropical migrants (U.S. Air Force, 2002).

Under the federal ESA, an endangered species is defined as any species in danger of extinction throughout all or a significant portion of its range, while a threatened species is defined as any species likely to become an endangered species in the foreseeable future. Candidate species are those species for which sufficient information is available to propose them as endangered or threatened under the ESA, but for which development of a proposed regulation is precluded by other, higher-priority listing activities. The state definitions of "endangered" and "threatened" are essentially the same as the federal definition. A species of special concern is defined as a population that warrants special protection, recognition, or consideration because it has an inherent significant vulnerability to habitat modification, environmental alteration, human disturbance, or substantial human exploitation that, in the foreseeable future, may result in its becoming a threatened species.

Okaloosa Darter

The Okaloosa darter is found in six small Choctawhatchee Bay tributaries located in the Sandhills ecological association. The streams that cross TA C-74 are tributaries that support habitat for the darter. Erosion can increase siltation and can imperil the darter's habitat. The species is both federally and state listed as endangered. Its range has been reduced by habitat modification and replacement by the brown darter. In order to protect the Okaloosa darter, the quantity and quality of water in the streams must be protected. Principal factors in the initial listing of the darter were the amount of its habitat degraded by road and dam construction, as well as siltation from land clearing (Jelks and Alam, 1998).

On 2 February 2010, under the authority of the ESA as amended, the USFWS proposed reclassifying the Okaloosa darter from endangered to threatened (50 Code of Federal Regulations [CFR] Part 17). The USFWS cited the substantial improvements in Eglin AFB darter habitat as the basis for the proposed downlisting. A review of scientific studies and field data indicated a reduction in species threats, habitat restorations throughout the species range, and stable or increasing species population trends. Eglin AFB was cited as having implemented effective habitat restoration programs to control erosion from roads, borrow pits, and test ranges. The proposed reclassification also included a proposed special rule under Section 4(d) of the ESA to allow takes for the following Eglin AFB activities:

- Unpaved range road stabilization
- Removal and replacement of stream crossing culverts for crossing decommissioning, removing biological barriers, and enhancing of stream habitats
- In-stream habitat restoration
- Land management prescribed burning
- Darter scientific research and monitoring

All other activities resulting in the "take" of Okaloosa darter would remain prohibited. This reduction in regulatory burden is designed to assist Eglin in focusing resources on other more vulnerable species and habitat areas. On 28 March 2011, the darter was officially downlisted by the USFWS from endangered to threatened [50 CFR 17.11(h)] (U.S. Air Force, 2011).

Red-Cockaded Woodpecker

The federally listed endangered red-cockaded woodpecker (RCW) is nonmigratory and territorial bird that inhabits the interstitial areas of the Eglin Reservation. The RCW excavates cavities in live longleaf pine trees that are at least 85 years old. Due to the preservation of continuous longleaf pine forests on Eglin Air Force Base (AFB), the Eglin Range has one of the largest remaining populations of RCWs in the country. The USFWS has identified Eglin AFB as 1 of 13 primary core populations for the RCW (USFWS, 2013). In 2009, the RCW population on Eglin AFB reached the designated recovery goal of 350 Potential Breeding Groups (PBGs) and reconsultation with USFWS was completed for future management of the species. In addition to the goal of 350 PBGs, Eglin Natural Resources personnel have developed a long-term goal of 450 PBGs in order to allow for more mission flexibility. The current RCW population size on Eglin AFB is 459 active clusters and 416 PBGs. The area considered necessary to reach the long-term population goal of 450 PBGs is known as the Core Conservation Area.

The Eglin RCW population is divided into an eastern subpopulation, which comprises all clusters east of Highway 85, and a western subpopulation, which comprises all clusters west of Highway 85. The two populations are demographically separate and each subpopulation is in a different state of health. The western subpopulation is large and increasing (342 PBGs in 2013); the eastern subpopulation is smaller (90 PBGs in 2013), but is stable and is apparently starting to increase. Eglin maintains geographic information system (GIS) information for active RCW cavity trees and foraging habitat around active clusters of RCW cavities.

High-quality RCW forage habitat consists of open pine stands with an average tree diameter at breast height (dbh) of 10 inches and larger. While 100 acres of mature pine is sufficient for some groups, birds commonly forage over several hundred acres where habitat conditions are not ideal. Depending on site productivity, different amounts of foraging habitat are required. Eglin Natural Resources has determined that RCW groups on the base utilize large areas for foraging habitat; thus, Eglin generally manages for 300 acres per cluster, with the allowance of 30 percent overlap with surrounding clusters.

Recommendations for good quality foraging habitat include 18 or more stems per acre that are greater than 60 years in age and greater than 14 inches dbh. Site conditions at Eglin are generally poor, and longleaf pine, therefore, tends to have smaller dbh and lower densities than in much of the rest of the RCW's range. Therefore, good quality foraging habitat on Eglin is defined as habitat that contains between 19 and 33 stems per acre of pines that are greater than 10 inches dbh. Additional requirements for good quality habitat include the presence of forbs and bunchgrasses in the understory, and sparse to no hardwood in the midstory.

Eglin has developed an Oracle-based GIS tool (model) that creates foraging habitat assessments, allowing Eglin to consistently and accurately estimate available foraging resources without sampling the entire Reservation (U.S. Air Force, 2013). The USFWS completed ESA Section 7 consultation on the model in June 2003 and concurred with Eglin Natural Resources findings of "not likely to adversely affect." Research has demonstrated that foraging analyses, such as Eglin's Oracle-based model, often accurately portray the actual territories of RCW groups (U.S. Air Force, 2002, 2005, and 2007).

Eastern Indigo Snake

The eastern indigo snake is found predominantly in pine sandhills that are maintained with regular fire. It is also associated with wetlands and riparian areas during warmer months. Indigo snakes are a commensal species associated with gopher tortoise burrows. They use abandoned burrows in winter and spring for egglaying, shedding, and protection from dehydration and temperature extremes. Eastern indigo snakes are very large, conspicuous, slow-moving and docile snakes that can grow to approximately 8.5 feet in length. The biggest threats to eastern indigo snakes are heavy equipment such as vehicles, motor-graders, and bush hogs, and humans who indiscriminately kill all snakes. Since the species is thought to require large tracts of protected habitat, Eglin AFB provides suitable habitat at the necessary scale.

Habitat preferences vary seasonally. Xeric sandhill winter dens are used from December to April, summer territories are selected from May to July, and from August through November they are frequently located in shady creek bottoms. These seasonal changes in habitat encourage the maintenance of travel corridors that link these different habitat types. The summer home range for a single male has been reported to be as large as 470 acres.

Protective measures were developed for this species by the USFWS. The protective measures require that prior to land-disturbing activities in known or suspected habitat, a protection/education plan be developed and submitted to the USFWS. This plan is being developed by the 96 CEG/CEIEA Natural Resources Office as a requirement resulting from consultation on the 2002-2006 Integrated Natural Resources Management Plan (INRMP). The

plan will contain information on how to identify the eastern indigo snake, what to do if one is spotted, who to notify and instructions to not harm, harass, injure, or kill the snake. As part of this plan, a brochure will be designed and distributed to all test area maintenance personnel informing them of the indigo snake conservation requirements. Only a person certified by the USFWS or the Florida Fish and Wildlife Conservation Commission is permitted to come in contact with or relocate an eastern indigo snake. Finally, the protective measures require a monitoring report be submitted to the USFWS describing implementation of the plan. All sightings of indigo snakes should be immediately reported to Natural Resources Office (U.S. Air Force, 2007).

Gopher Tortoise

The gopher tortoise is found primarily within the longleaf pine of the Sandhills, as well as the sand pine scrub and live oak hammocks of the Sand Pine and Open/Grassland ecological associations (U.S. Air Force, 2003). Documented observations and known locations of gopher tortoise burrows are depicted in Figure 3-5. Well-drained soils, low plant growth for food, and open sunny areas are required conditions for nesting. The life of the gopher tortoise revolves around a burrow constructed by digging with the tortoise's shovel-like feet. These burrows can be up to 40 feet (12 meters) in length and 10 feet (3 meters) in depth. Gopher tortoise burrows are essential to the ecosystem of dry, sandy uplands. These burrows not only provide shelter for the gopher tortoise, but also for many other species of animals including such sensitive species as the indigo snake, pine snake, and gopher frog. The burrows remain at fairly constant temperature and humidity throughout the year, acting as a refuge from cold, heat, and dryness. They also act as a refuge from periodic fires that occur in this dry habitat.

Female tortoises lay 3 to 15 eggs in the sand in front of their burrows during late April and May. These eggs incubate for up to 100 days. Predators, such as raccoons, coyotes, and snakes destroy more than 80 percent of gopher tortoise nests, resulting in a very low hatching success rate (Pucket and Franz, 1991). The location of the burrows are considered sensitive information, but may be obtained from the Natural Resources Office prior to the planning of ground-disturbing activities (U.S. Air Force, 2005 and 2007).

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APPENDIX D

PUBLIC INVOLVEMENT AND STATE AGENCY CORRESPONDENCE

PUBLIC NOTIFICATION

In compliance with the National Environmental Policy Act, Eglin Air Force Base (AFB) announces the availability of the *Test Area C-74 Complex Draft Final Range Environmental Assessment*, and Draft Final Finding of No Significant Impact (FONSI), for public review.

The Air Force proposes to authorize a new level of test and training activities at Test Area C-74 Complex on Eglin AFB, based on the anticipated maximum usage. Proposed action military activities would consist of TA C-74 Kinetic Energy Munitions Facility sled track operations and on-site disposal of sled track items by Explosive Ordnance Disposal. The single item EOD operations are not a test activity but rather a safety procedure conducted as needed. TA C-74A analysis of the effects of sled track-induced impacts on internal condition of test items and structures would continue. Site vegetation, target, and road maintenance activities would continue.

Your comments on this Final Range Environmental Assessment are requested. Letters or other written or oral comments provided may be published in the Final REA. As required by law, comments will be addressed in the Final REA and made available to the public. Any personal information provided will be used only to identify your desire to make a statement during the public comment period or to fulfill requests for copies of the Final REA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the Final REA. However, only the names and respective comments of respondent individuals will be disclosed. Personal home addresses and phone numbers will not be published in the Final REA.

Copies of the Final REA and Final FONSI may be reviewed online at www.eglin.af.mil/eglindocuments.asp from June 19 until July 18, 2015. Local libraries have Internet access, and librarians can assist in accessing this document. Comments must be received by July 21, 2015, to be included in the Final REA.

For more information or to comment on these proposed actions, contact: Mike Spaits, 96 TW Public Affairs, 101 West D Ave., Ste. 238, Eglin AFB, Florida 32542 or email: michael.spaits@us.af.mil. Tel: (850) 882-2836; Fax: (850) 882-4894.

STATE CLEARINGHOUSE RESPONSE

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
MARJORY STONEMAN DOUGLAS BUILDING
3900 COMMONWEALTH BOULEVARD
TALLAHASSEE, FLORIDA 32399-3000

RICK SCOTT
GOVERNOR

CARLOS LOPEZ-CANTERA
LT. GOVERNOR

JONATHAN P. STEVERSON
INTERIM SECRETARY

May 19, 2015

Mr. W. Jamie McKee
Project Manager
Leidos
1140 North Eglin Parkway
Shalimar, FL 32579

RE: Department of the Air Force – Draft Range Environmental Assessment (REA) for Test Area C-74 Complex, Eglin Air Force Base – Walton County, Florida.
SAI # FL201504147250C

Dear Jamie:

The Florida State Clearinghouse has coordinated a review of the referenced Draft REA under the following authorities: Presidential Executive Order 12372; § 403.061(42), *Florida Statutes*; the Coastal Zone Management Act, 16 U.S.C. §§ 1451-1464, as amended; and the National Environmental Policy Act, 42 U.S.C. §§ 4321-4347, as amended.

The Florida Department of Environmental Protection's (DEP) Northwest District Office staff in Pensacola notes that an environmental resource permit (ERP) under Chapter 62-330, *Florida Administrative Code* (*F.A.C.*), will not be required for the proposed activities unless the Proposed Action to "repair mission-induced damage to TA natural resources" includes impacts to surface waters or wetland areas. Specifically, creek crossings, stream restoration, wetland plantings, bridges and boardwalks over wetlands, or any other activity involving wetland impacts will need an ERP and, possibly, a sovereignty submerged lands authorization under Chapter 18-21, *F.A.C.* For further information and assistance with the state's permitting requirements, please contact Ms. Ashlynn Smith in the Northwest District Office at (850) 595-0628 or Ashlynn.N.Smith@dep.state.fl.us.

The Florida Department of State (DOS) reports that a review of the Florida Master Site File indicated that there are several recorded historic properties within the proposed TA C-74 and TA C74-L project areas. Although the DOS has insufficient information to determine whether many of the buildings are eligible for listing in the *National Register of Historic Places*, sites 8WL1963, 8OK1948, 8WL1965-WL1971 may be contributing resources to a potential historic district associated with the Damage Potential Test Range (aka Range 74, Range E and C-74). Several buildings and one archaeological site at TA C-74A are considered eligible for *National Register* listing. With the stipulation of Test Area mission activities being restricted from known cultural resource locations and high-probability unsurveyed areas, DOS advises that

there will be no adverse effect on historic properties listed, or eligible for listing, on the *National Register*. Please refer to the enclosed DOS letter for additional information.

Based on the information contained in the Draft REA and enclosed state agency comments, the state has determined that, at this stage, the proposed activities are consistent with the Florida Coastal Management Program (FCMP). To ensure the project's continued consistency with the FCMP, the concerns identified by our reviewing agencies must be addressed prior to project implementation. The state's continued concurrence will be based on the activities' compliance with FCMP authorities, including federal and state monitoring of the activities to ensure their continued conformance, and the adequate resolution of any issues identified during subsequent regulatory reviews. The state's final concurrence of the project's consistency with the FCMP will be determined during the environmental permitting process, in accordance with Section 373.428, *Florida Statutes*, if applicable.

Thank you for the opportunity to review the draft document. Should you have any questions regarding this letter, please don't hesitate to contact me at Lauren.Milligan@dep.state.fl.us or (850) 245-2170.

Yours sincerely,

Lauren P. Milligan

Lauren P. Milligan, Coordinator
Florida State Clearinghouse
Office of Intergovernmental Programs

Enclosures

cc: Ashley Livingston, DEP, Northwest District
Timothy Parsons, DOS

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Project Information	
Project:	FL201504147250C
Comments Due:	05/21/2015
Letter Due:	06/02/2015
Description:	DEPARTMENT OF THE AIR FORCE - DRAFT RANGE ENVIRONMENTAL ASSESSMENT FOR TEST AREA C-74 COMPLEX, EGLIN AIR FORCE BASE - WALTON COUNTY, FLORIDA.
Keywords:	USAF - DREA, TEST AREA C-74 COMPLEX - EGLIN AFB, WALTON CO.
CFDA #:	12.200

Agency Comments:
FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
NO COMMENT BY TED HOEHN ON 4/29/15.
NORTHWEST FLORIDA WMD - NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
No Comments
ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
The DEP's Northwest District Office staff in Pensacola notes that an environmental resource permit (ERP) under Chapter 62-330, F.A.C., will not be required for the proposed activities unless the Proposed Action to "repair mission-induced damage to TA natural resources" includes impacts to surface waters or wetland areas. Specifically, creek crossings, stream restoration, wetland plantings, bridges and boardwalks over wetlands, or any other activity involving wetland impacts will need an ERP and, possibly, a sovereignty submerged lands authorization under Chapter 18-21, F.A.C. For further information and assistance with the state's permitting requirements, please contact Ms. Ashlynn Smith in the Northwest District Office at (850) 595-0628 or Ashlynn.N.Smith@dep.state.fl.us.
STATE - FLORIDA DEPARTMENT OF STATE
The DOS reports that a review of the Florida Master Site File indicated that there are several recorded historic properties within the proposed TA C-74 and TA C74-L project areas. Although DOS has insufficient information to determine whether many of the buildings are eligible for listing in the National Register of Historic Places, sites 8WL1963, 8OK1948, 8WL1965-WL1971 may be contributing resources to a potential historic district associated with the Damage Potential Test Range (aka Range 74, Range E and C-74). Several buildings and one archaeological site at TA C-74A are considered eligible for National Register listing. With the stipulation of Test Area mission activities being restricted from known cultural resource locations and high-probability unsurveyed areas, DOS advises that there will be no adverse effect on historic properties listed, or eligible for listing, on the National Register.

For more information or to submit comments, please contact the Clearinghouse Office at:

3900 COMMONWEALTH BOULEVARD, M.S. 47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

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FLORIDA DEPARTMENT *of* STATE

RICK SCOTT
Governor

KEN DETZNER
Secretary of State

Florida State Clearinghouse
Agency Contact and Coordinator (SCH)
Attn: Lauren Milligan
3900 Commonwealth Blvd. MS-47
Tallahassee, Florida 32399-3000

April 17, 2015

RE: DHR Project File No.: 2015-1824/ Received by DHR: April 17, 2015
Application No.: SAI FL201504147250C
Project: *Draft Range Environmental Assessment for Test Area C-74 Complex, Eglin Air Force Base*
County: Walton

Dear Ms. Milligan,

Our office received and reviewed the project in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended and the *National Environmental Policy Act of 1969*. The State Historic Preservation Officer is to advise and assist federal agencies when identifying historic properties (archaeological, architectural, and historical resources) listed, or eligible for listing, in the National Register of Historic Places, assessing the project's effects, and considering alternatives to avoid or minimize adverse effects.

A review of the Florida Master Site File data indicates that there are several recorded historic properties within the proposed TA C-74 and TA C74-L project areas. This office has insufficient information to determine if buildings 9351, 9354, 9356, 9358, 9359, 9360, 9361, 9370, 9507 and 9508 are eligible for the *National Register*, however, (8WL1963, 8OK1948, 8WL1965-WL1971) may be contributing resources to a potential historic district associated with the Damage Potential Test Range (aka Range 74, Range E, and C-74).

Within project area TA C-74A, buildings 9518, 9519, 9520, 9521 and 9532 (8WL2240-WL2241, 8WL2196, 8WL2195 and 8OK1952) are considered eligible for listing on the *NRHP*. One eligible archaeological site (8WL2092) is also within the boundaries of TA C-74A. Eglin considers site 8WL2092 a restricted access area and will continue to avoid it. In addition, based on site conditions avoidance of the unsurveyed area along the southwest boundary may be required to prevent disturbance to high-probability areas.

It is the opinion of this office that with the stipulation of Test Area mission activities being restricted from known cultural resource locations and high-probability unsurveyed areas, there will be no adverse effect on historic properties listed, or eligible for listing, on the *NRHP*.

VIVA FLORIDA

Division of Historical Resources
R.A. Gray Building • 500 South Bronough Street• Tallahassee, Florida 32399
850.245.6333 • 850.245.6439 (Fax) dos.myflorida.com/historical/
Promoting Florida's History and Culture **VivaFlorida.org**

Historical Resources
www.flheritage.com

Ms. Milligan
April 17, 2015
Page 2

For any questions concerning our comments, please contact Mary Berman, Historic Sites Specialist, by phone at 850.245.6333 or by electronic mail at Mary.Berman@dos.myflorida.com.

Sincerely,

Robert F. Bendus, Director
Division of Historical Resources
and State Historic Preservation Officer

APPENDIX E

FLORIDA COASTAL ZONE MANAGEMENT ACT (CZMA) DETERMINATION

FEDERAL AGENCY COASTAL ZONE MANAGEMENT ACT (CZMA)
CONSISTENCY DETERMINATION

This document provides the State of Florida with the U.S. Air Force's Consistency Determination under CZMA Section 307 and 15 C.F.R. Part 930 sub-part C. The information in this Consistency Determination is provided pursuant to 15 C.F.R. Section 930.39 and Section 307 of the Coastal Zone Management Act, 16 U.S.C. § 1456, as amended, and its implementing regulations at 15 C.F.R. Part 930.

This federal consistency determination addresses current and anticipated Test Area (TA) C-74 operations on Eglin AFB, Florida.

Proposed Federal Agency Action:

The C-74 Complex is composed of three TAs: C-74, C-74L, and C-74A (Figure 1). The test missions at the TA C-74 Complex include the Kinetic Energy Munitions Test Facility (KEMTF), gunnery ballistics testing, and static munitions testing. Table 1 depicts the level of activity for the major mission activities at TA C-74. The types of expendables shown in Table 2 are typical of munitions in the general categories authorized for use: sled track operations, static test detonations, and gunnery ballistics testing. The munitions shown in Table 2 are actual expendables from tests conducted on the TA C-74 Complex and are typical or representative examples of munition types for each category. Future expendables are expected to be similar but may not be exactly alike.

Dud or classified items may require explosive ordnance disposal (EOD). The EOD explosive charges are captured in Table 1 as static munitions of 1 pound or less. The disposal site is located adjacent to an unimproved road on a terrace plateau in the southwestern portion of TA C-74. It consists of two pits where item detonations are conducted (Figures 2 and 3).

Live warheads and other munitions not detonated during sled track testing are taken to the EOD site for single-item demolition detonation. These items, captured as sled track testing expendables in Table 1, are not stored but detonated following a test. The item and number of the 20 live munitions disposed at the EOD detonation site between December 2011 and September 2014 include Hard Target Void Sensing (HTVS) Bomb Live Unit (BLU)-109 (10), Electromagnetic Frequency Weapon (EFW) BLU-109 (3), HTVS DT1 BLU-109 (1), HTVS BLU-113 (4), BLU-113 (1), and Joint Air-to-Surface Standoff Munition (JASSM) (1). Munition demolition debris is recovered following each event. All demolition activities are conducted by 96th Civil Engineer Squadron, Explosive Ordnance Disposal Flight. Of the expendables listed under sled track operations in Table 1, 15 large bombs did not detonate as planned and were disposed of by EOD. The Proposed Action includes corrective actions to correct or repair

mission-induced damage to test area natural resources. These corrective actions are listed in *Chapter 5 of the TA C-74 Complex Range Environmental Assessment (REA).*

Table 1. TA C-74 Mission Number Events and Expenditures

Mission Activity	Number of Events	Number of Expenditures
KEMTF Sled Track Operations		
Rocket Motors	50	450
Inert Munitions		30
Live Munitions		20
Static Munitions Testing (Arena Test Area)		
Large Munitions (>50 lb NEW)	20	20
Small Munitions (<50 lb NEW)		15
Other (1 lb or less NEW)		140
Gunnery Ballistics Testing		
TA C-74 Arena Test Area Inert munitions	30	30
TA C-74L – Gunnery	60	15,000

Table 2. Typical Types of Expenditures by TA C-74 Mission Activity

KEMTF Sled Track Operations		
Rocket Motors	HVAR rocket motor	Zuni rocket motor
	Genie rocket motor	MLRS pupfish motor
Inert Munitions	MLRS	BLU-109 Penetrator 2000 lb
	BLU-109 X/B W/Inert AFX-757	BLU-113 A(D-1)/B
	BLU-109a/B live load	Bomb practice BLU-109(D-1)/B
	Mk-82	Bomb, BLU-122/B, Inert
	I-1000	Bomb, guided, general
	JAST WHD	Bomb, practice
	JASSM WHD	Fin assembly, bomb
	Nose plug bomb 750lb M117	I-500 bomb AFX-757 Inert -201
	Mk-82	Inert, BLU-129/B, PN X20107104
Live Munitions	MMTD WHD	BLU-109 penetrator 2,000 ls AFX-757
	BLU-109C/B AFX-757 penetrator	BLU-109 with embedded fuze well
	Bomb, BLU-109/B	Bomb, GP BLU-113/A
	AUP WHD	Bomb, GP BLU-129/b 500 lb
	HTW 1,000-pound bomb	JASSM WHD
Static Munitions Testing		
Live Munitions	JASSM 920-scale	Colt 45 WHD
	JASSM 1/3-scale	Mk-84
Miscellaneous	C-4, 1 pound	C-4, 0.125 lb
Gunnery Ballistics Testing		
Inert Munitions	JASSM 920-scale (inert)	JASSM 1/3-scale (inert)
Gunnery	30-mm HEI (PGU-13/B)	25-mm HEI (PGU/38)
	30-mm TP (PGU-15/B)	25-mm TP (PGU-23/U)
	20-mm HEI	105 mm
	20-mm TP	

AFX = a type of plastic bonded explosive; AUP = Advanced Unitary Penetrator; BLU = Bomb Live Unit; HVAR = High Velocity Air Rocket; GP = General Purpose; HEI = High Explosive Incendiary; HTW = Hard Target Weapon; JASSM = Joint Air-to-Surface Standoff Munition; JAST = Joint Air-to-Surface Target; KEMTF = Kinetic Energy Munitions Test Facility; lb = pound; MK = Mark; MLRS = Multiple Launch Rocket System; mm = millimeter; MMTD = Miniaturized Munitions Technology Demonstration; PGU = Projectile Gun Unit; TP = Target Practice; WHD = Warhead

Federal Consistency Review:

Statutes addressed as part of the Florida Coastal Zone Management Program consistency review and considered in the analysis of the Proposed Action are discussed in the following table.

Pursuant to 15 C.F.R. § 930.41, the Florida State Clearinghouse has 60 days from receipt of this document in which to concur with or object to this Consistency Determination, or to request an extension, in writing, under 15 C.F.R. § 930.41(b). Florida's concurrence will be presumed if Eglin AFB does not receive its response on the 60th day from receipt of this determination.

Florida Coastal Management Program Consistency Review

Statute	Consistency	Scope
Chapter 161 *Beach and Shore Preservation*	The Proposed Action would not affect beach and shore management, specifically as it pertains to: • The Coastal Construction Permit Program. • The Coastal Construction Control Line (CCCL) Permit Program. • The Coastal Zone Protection Program. All activities would occur on federal property.	This statute provides policy for the regulation of construction, reconstruction, and other physical activities related to the beaches and shores of the state. Additionally, this statute requires the restoration and maintenance of critically eroding beaches.
Chapter 163, Part II *Growth Policy, County and Municipal Planning; Land Development Regulation*	The Proposed Action would not affect local government comprehensive plans.	Provide for the implementation of comprehensive planning programs to guide and control future development of the state.
Chapter 186 *State and Regional Planning*	The Proposed Action would not affect state plans for water use, land development, or transportation.	Provides direction for the delivery of governmental services, a means for defining and achieving the specific goals of the state, and a method for evaluating the accomplishment of those goals in regards to the state comprehensive plan.
Chapter 252 *Emergency Management*	The Proposed Action would not affect the state's vulnerability to natural disasters. The Proposed Action would not affect emergency response and evacuation procedures.	Directs the state to reduce the vulnerability of its people and property to natural and manmade disasters; prepare for, respond to and reduce the impacts of disasters; and decrease the time and resources needed to recover from disasters.
Chapter 253 *State Lands*	All activities would occur on federal property; therefore the Proposed Action would not affect state lands.	Addresses the acquisition, administration, management, control, supervision, conservation, protection, and disposition of all state lands.
Chapter 258 *State Parks and Preserves*	The Proposed Action would not affect state parks, recreational areas and aquatic preserves.	Addresses the state's administration of state parks, aquatic preserves, and recreation areas.
Chapter 259 *Land Acquisitions for Conservation or Recreation*	The Proposed Action would not affect tourism and/or outdoor recreation.	Addresses public ownership of natural areas for purposes of maintaining the state's unique natural resources; protecting air, land, and water quality; promoting water resource development to meet the needs of natural systems and citizens of this state; promoting

Statute	Consistency	Scope
		restoration activities on public lands; and providing lands for natural resource based recreation.
Chapter 260 *Florida Greenways and Trails Act*	The Proposed Action would not affect the Greenways and Trails Program.	Statewide system of greenways and trails established in order to conserve, develop, and use the natural resources of Florida for healthful and recreational purposes.
Chapter 267 *Historical Resources*	Potential impacts to cultural resources from C-74 operations are analyzed in Section 3.2 of REA. The potential for impacts to buried cultural resources can vary based on ground activity spatial and temporal variables. Some ground-disturbing activities, such as TA C-74 vegetation management, are conducted yearly over 64 percent of the test area, whereas disturbances associated with downrange retrieval of expended KEMTF sled track items and EOD detonation site operations would be scattered and occur infrequently. Adverse effects to known TA C-74 cultural resources are not anticipated. Test area mission activities should be restricted from cultural resource locations to avoid potential impacts. Therefore, the Proposed Action would not affect the state's archaeological and historical resources.	Addresses the management and preservation of the state's archaeological and historical resources.
Chapter 288 *Commercial Development and Capital Improvements*	The Proposed Action would not affect future business opportunities on state lands, or the promotion of tourism in the region.	Promotes and develops general business, trade, and tourism components of the state economy
Chapter 334 *Transportation Administration*	The Proposed Action would not affect transportation.	Addresses the state's policy concerning transportation administration.
Chapter 339 *Transportation Finance and Planning*	The Proposed Action would not affect the finance and planning needs of the state's transportation system.	Addresses the finance and planning needs of the state's transportation system.
Chapter 373 *Water Resources*	Potential impacts to water resources from C-74 operations are analyzed in Section 1.3 of the REA. Based on observed TA C-74 slope stabilization treatments, minimal roadway maintenance requirements, adoption of low-impact mission expenditure recovery procedures for sensitive slope and stream areas, and previous analysis for potential soil	Addresses sustainable water management; the conservation of surface and ground waters for full beneficial use; the preservation of natural resources, fish, and wildlife; protecting public land; and promoting the health and general welfare of Floridians.

Statute	Consistency	Scope
	contamination. C-74 operations are not expected to negatively impact water resources. Therefore, the Proposed Action would not affect water resources of the state.	
Chapter 375 *Outdoor Recreation and Conservation Lands*	The Proposed Action would not affect opportunities for recreation on state lands.	Addresses the development of a comprehensive multipurpose outdoor recreation plan, with the purpose to document recreational supply and demand, describe current recreational opportunities, estimate the need for additional recreational opportunities, and propose the means to meet the identified needs.
Chapter 376 *Pollutant Discharge Prevention and Removal*	Potential impacts from hazardous materials, waste, and debris resulting from C-74 operations are analyzed in Section 1.3 of the REA. Currently, munitions debris is recovered and/or removed from the ranges for the purpose of storage, reclamation, treatment, and disposal as solid waste. Munitions that are accelerated on the KEMTF and propelled downrange are carefully tracked, retrieved, and analyzed. Since the munitions being tested are cleared after each mission, the annual range clearance requirement is incrementally accomplished throughout the year, rather than at one time during the year. These practices are necessary to comply with Air Force Instruction (AFI) 13-212, which requires the range to be cleared of munitions debris on a regular basis. Therefore, the Proposed Action would not affect the transfer, storage, transportation of pollutants, and cleanup of pollutant discharges.	Regulates transfer, storage, and transportation of pollutants, and cleanup of pollutant discharges.
Chapter 377 *Energy Resources*	The Proposed Action would not affect energy resource production, including oil and gas, and/or the transportation of oil and gas.	Addresses regulation, planning, and development of the energy resources of the state; provides policy to conserve and control the oil and gas resources in the state.
Chapter 379 *Fish and Wildlife Conservation*	Potential impacts on biological resources, including sensitive species, are analyzed in Section 3.1 of the REA. Noise impacts would likely be limited to startling responses from individual birds or animals. No adverse impacts to sensitive species habitats or breeding and nesting success were identified.	Establishes the framework for the management and protection of the state of Florida's wide diversity of fish and wildlife resources.

Statute	Consistency	Scope
	Fires potentially ignited by mission-related activities could affect habitats within and in proximity to TA C-74; however, no adverse impacts to sensitive species or their habitats are anticipated. In most cases, burn events would likely benefit sensitive species habitat conditions. Prior to any ground disturbance, a gopher tortoise survey would be completed. If a gopher tortoise burrow cannot be avoided, then the tortoise would be relocated in accordance with the Florida Fish and Wildlife Conservation Commission (FWC) protocols. As a result of potential impacts to protected, an Endangered Species Act (ESA) Section 7 consultation will be prepared for the U.S. Fish and Wildlife Service (USFWS). All requirements resulting from this consultation will be followed. Therefore, the Proposed Action would be consistent with Florida's statutes and regulations regarding the protection of fish and wildlife resources of the state.	
Chapter 380 *Land and Water Management*	The Proposed Action would not affect development of state lands with regional (i.e., more than one county) impacts. The Proposed Action would not include changes to coastal infrastructure such as capacity increases of existing coastal infrastructure, or use of state funds for infrastructure planning, designing or construction.	Establishes land and water management policies to guide and coordinate local decisions relating to growth and development.
Chapter 381 *Public Health, General Provisions*	The Proposed Action would not affect the state's policy concerning the public health system.	Establishes public policy concerning the state's public health system.
Chapter 388 *Mosquito Control*	The Proposed Action would not affect mosquito control efforts.	Addresses mosquito control efforts in the state.
Chapter 403 *Environmental Control*	Potential impacts to air, soil, and water resources from C-74 operations are analyzed in Section 1.3 of the REA. Based on observed TA C-74 slope stabilization treatments, minimal roadway maintenance requirements, adoption of low-impact mission expenditure recovery procedures for sensitive slope and stream areas, and previous analysis for potential	Establishes public policy concerning environmental control in the state.

Statute	Consistency	Scope
	soil contamination. C-74 operations are not expected to negatively impact water or soil resources. Emissions released during mission activities are well within the National Ambient Air Quality Standards (NAAQS) and make up less than 0.03 percent of the total Walton County emissions. Therefore, the Proposed Action would not affect air quality, water quality, pollution control, solid waste management, and other environmental control efforts.	
Chapter 553 *Building and Construction Standards*	The Proposed Action would not include construction of buildings.	Addresses building construction standards and provides for a unified Florida Building Code.
Chapter 582 *Soil and Water Conservation*	Potential impacts to soil and water resources from C-74 operations are analyzed in Section 1.3 of the REA. Based on observed TA C-74 slope stabilization treatments, minimal roadway maintenance requirements, adoption of low-impact mission expenditure recovery procedures for sensitive slope and stream areas, and previous analysis for potential soil contamination, C-74 operations are not expected to negatively impact soil and water resources. Therefore, the Proposed Action would not affect soil and water conservation efforts.	Provides policy regarding the control and prevention of soil erosion.
Chapter 597 *Aquaculture*	The Proposed Action would not affect state aquaculture efforts.	Establishes public policy concerning the cultivation of aquatic organisms of the state. Addresses state aquaculture plan which provides for the coordination and prioritization of state aquaculture efforts, the conservation and enhancement of aquatic resources and provides mechanisms for increasing aquaculture production.

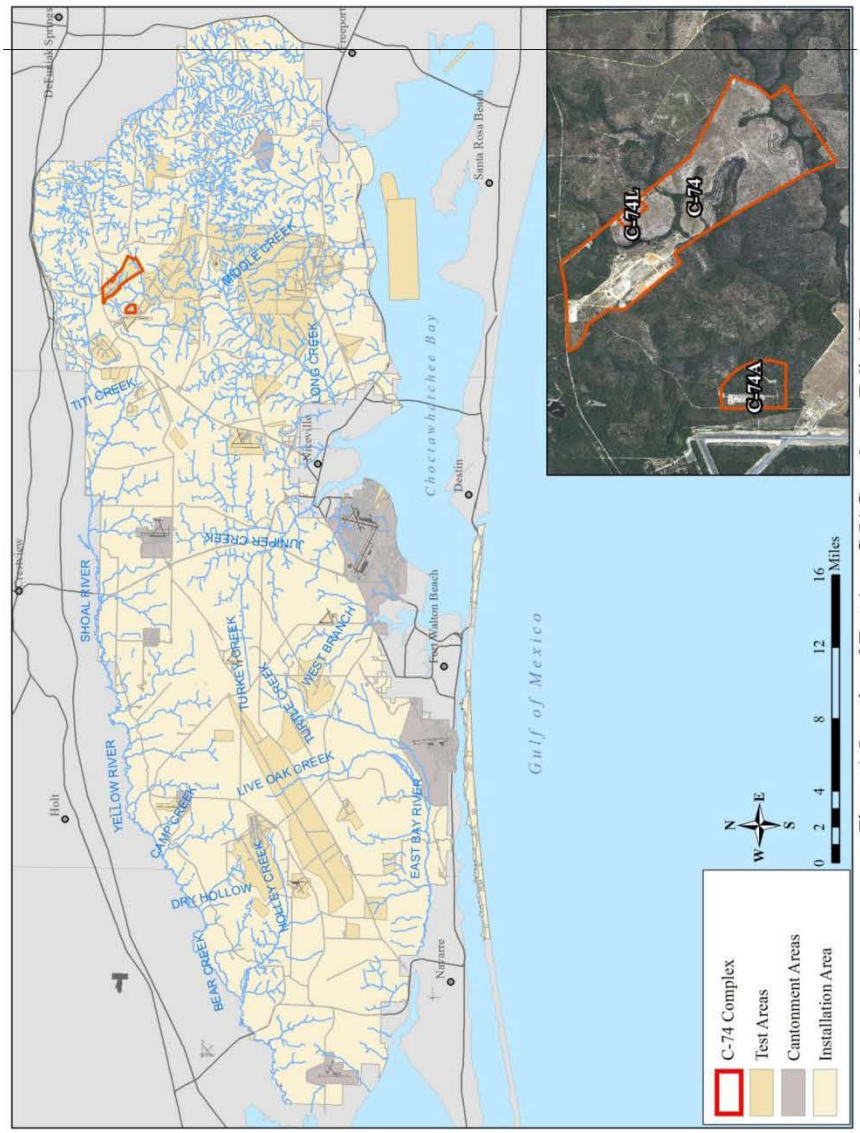

Figure 1. Location of Test Area C-74 Complex on Eglin AFB

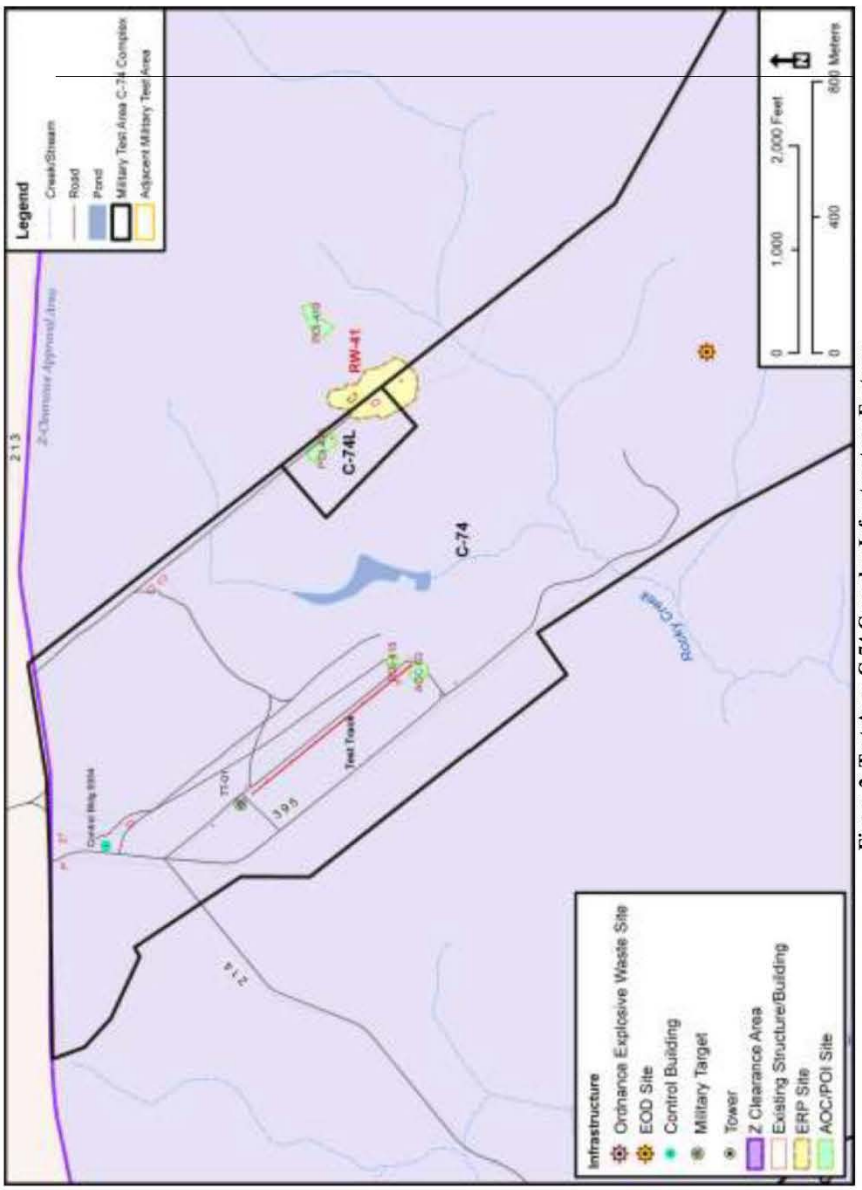

Figure 2. Test Area C-74 Complex Infrastructure Features

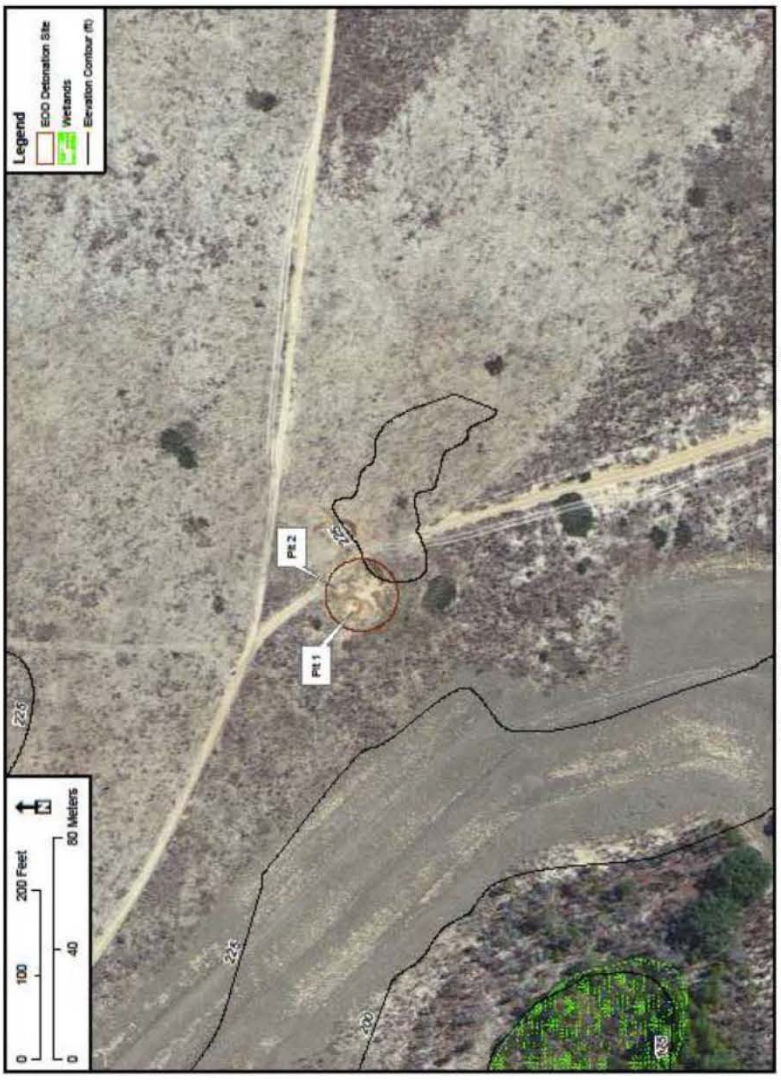

Figure 3. Test Area C-74 EOD Detonation Site

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APPENDIX F

SECTION 7 CONSULTATION (BIOLOGICAL ASSESSMENT)

DEPARTMENT OF
HEADQUARTERS 96T
EGLIN AIR FORC

U.S. Fish and Wildlife Service
1601 Balboa Avenue
Panama City, Florida 32405
(850) 769-3552 Fax: (850) 763-2177

FWS log No. 2015-I-0162

The proposed action is not likely to adversely affect resources protected by the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.). This finding fulfills the requirements of the Act.

Dr. Stella M. Bishop, Ecological Services Chief — Date 8/5/15

Mr. Bruce Hagedorn
Chief, Eglin AFB Natural Resources
96 CEG/CEIEA
501 De Leon Street, Suite 101
Eglin AFB FL 32542-5133

RECEIVED
JUL 08 2015
BY:

Dr. Catherine Phillips
U.S. Fish and Wildlife Service
1601 Balboa Avenue
Panama City FL 32405

Dear Dr. Phillips,

The following document is being submitted to fulfill requirements under Section 7 of the Endangered Species Act (ESA). This biological assessment (BA) addresses potential impacts to federally listed threatened and endangered (T&E) species located within the Test Area (TA) C-74 Complex. The analysis provides a determination of potential impacts to federally listed T&E species and identifies avoidance and minimization measures to lessen potential impacts.

Eglin Natural Resources would notify the U.S. Fish and Wildlife Service (USFWS) immediately if it modifies any of the actions considered in the Proposed Action or if additional information on listed species becomes available, as the USFWS may require a reinitiation of consultation. Prior to commencement of activities, Eglin would implement any modifications or conditions resulting from consultation with the USFWS. If an impact to a listed species occurs beyond what Eglin has considered in this assessment, all operations would cease and Eglin would notify the USFWS. If you have any questions, please contact Mr. Rodney Felix (850) 883-1153 or myself at (850) 882-8391.

Sincerely,

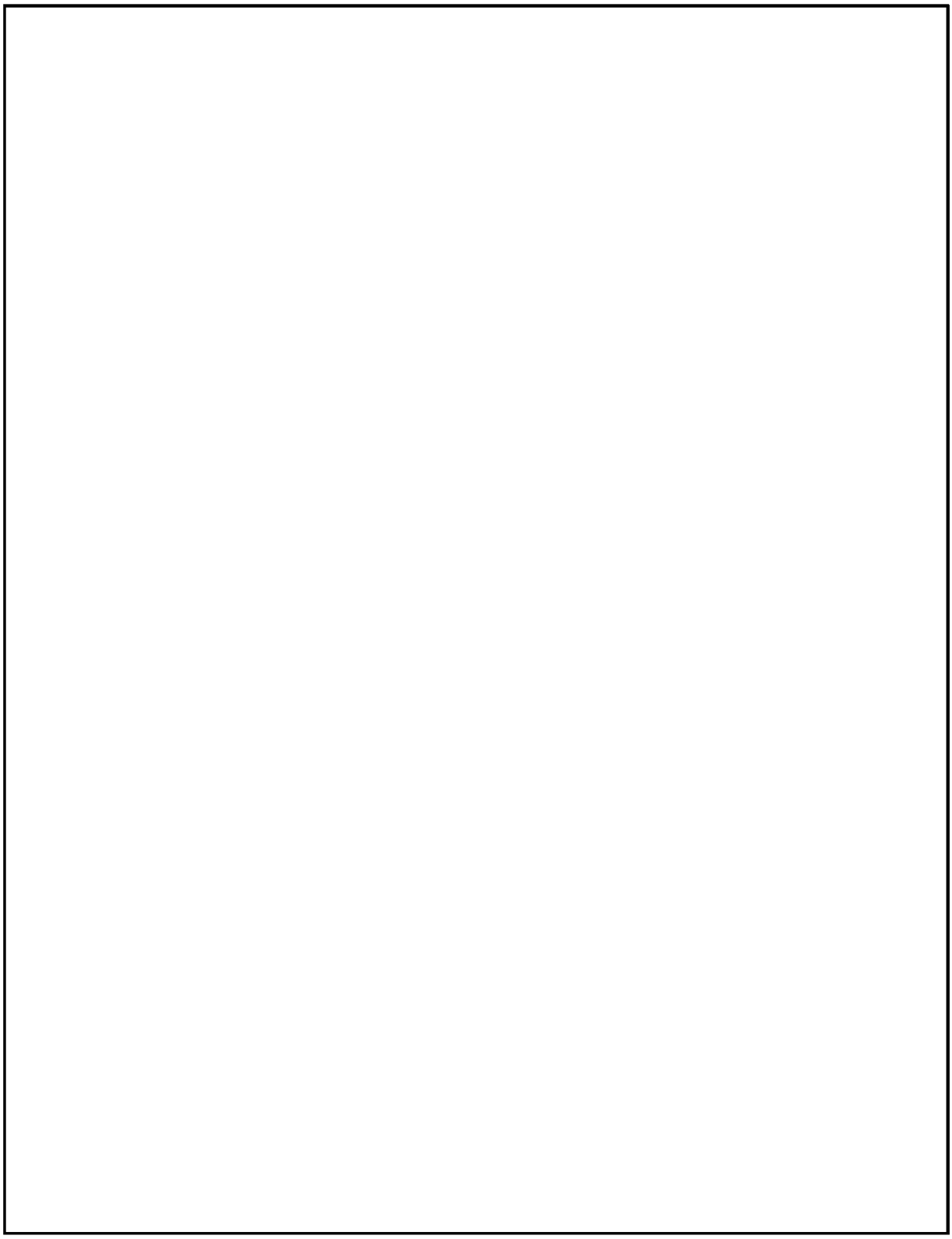
Bruce Hagedorn
BRUCE HAGEDORN
Chief, Eglin AFB Natural Resources

Enclosure:
BA for the TA C-74 Complex

EGLIN AIR FORCE BASE
Florida

FINAL
BIOLOGICAL ASSESSMENT FOR
THE
TEST AREA C-74 COMPLEX

MAY 2015



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ACRONYMS, SYMBOLS, AND ABBREVIATIONS

AFB	Air Force Base
BA	Biological Assessment
EOD	explosive ordnance disposal
ESA	Endangered Species Act
KEMTF	Kinetic Energy Munitions Test Facility
NEW	net explosive weight
PBG	potential breeding groups
PBO	Programmatic Biological Opinion
RCW	red-cockaded woodpecker
TA	Test Area
USFWS	U.S. Fish and Wildlife Service
WFPM	Wildland Fire Program Manager

1. INTRODUCTION

This Biological Assessment (BA) is being submitted to fulfill requirements under Section 7 of the Endangered Species Act (ESA) regarding activities at Eglin Air Force Base's (AFB) Test Area (TA) C-74 Complex. The document addresses potential impacts to species listed as endangered or threatened under the ESA as well as candidate species. An *endangered* species is defined as any species that is in danger of extinction throughout all or a significant portion of its range, while a *threatened* species is any species considered likely to become endangered within the foreseeable future. Candidate species are those for which information is available to propose them as endangered or threatened but for which development of a proposed regulation is precluded by other, higher priority listing activities. This BA, prepared by Eglin AFB Natural Resources, represents an informal consultation with the U.S. Fish and Wildlife Service regarding activities described in the Preferred Alternative as described in the associated *Test Area C-74 Complex Range Environmental Assessment* (U.S. Air Force, 2015).

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2. TEST AREA DESCRIPTION

The TA C-74 Complex is located on the eastern half of the Eglin Range in Walton County, Florida, approximately 20 miles northeast of Eglin Main Base (Figure 1). The TA C-74 Complex is composed of three test areas, including TA C-74 (contains the Kinetic Energy Munitions Test Facility [KEMTF]), TA C-74L (Gunnery Ballistics Facility), and TA C-74A (Munitions Analysis Facility). TAs C-74 and C-74L are contained within the same 1,054-acre area, which is approximately 2.5 miles long and 0.5 mile wide. TA C-74A is located about 6,000 feet (1.1 miles) to the west. TA C-74 is used predominantly for kinetic energy munitions testing, which involves launch of munitions by use of an inclined, rocket-powered, dual-rail sled track. The downrange impact/recovery area consists of about 773 acres of maintained grassland, a 4-acre pond, and 83 acres in riparian/wetland area. In addition to the sled track, other operational facilities at TA C-74 include instrumentation, buildings and structures, targets, roads, and multiple observation/spotting towers.

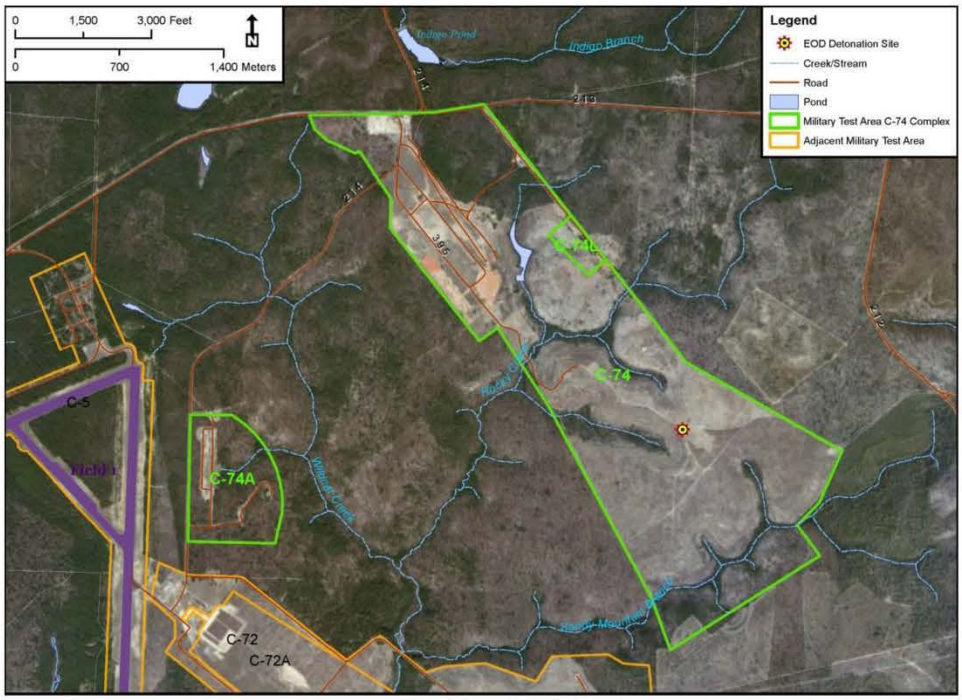

Figure 1. Test Area C-74 Complex

TA C-74A is used to analyze the internal combustion of munitions items by nondestructive (x-ray) or destructive (sectioning) test techniques and provide a temporary storage location for test munitions. Gun and ammunition testing was historically conducted at TA C-74L but is not expected in the foreseeable future. An explosive ordnance disposal (EOD) site is also located

within the complex. The EOD site is located approximately 300 feet off an unpaved road and consists of two pits that are used to detonate live warheads and other munitions. The estimated widths of the pits are 15 and 30 feet. The EOD site is located on a hill terrace plateau with adjacent lands sloping toward the pits. Missions conducted at any area of the TA C-74 Complex are authorized, scheduled, and monitored by the 96th Test Wing.

3. BIOLOGICAL INFORMATION

Four animal species listed under the ESA as endangered, threatened, or candidate species may occur on or near the TA C-74 Complex. These species are listed in Table 1 and are described further in the following subsections. There is no federally protected plant species associated with TA C-74.

Table 1. Federally Protected Species Potentially Occurring on or Near Test Area C-74

Common Name	Scientific Name	Federal Status
Okaloosa darter	*Etheostoma okaloosae*	Threatened
Red-cockaded woodpecker	*Picoides borealis*	Endangered
Gopher tortoise (eastern population)	*Gopherus polyphemus*	Candidate
Eastern indigo snake	*Drymarchon corais couperi*	Threatened

3.1 OKALOOSA DARTER

The Okaloosa darter, reclassified in April 2011 from endangered to threatened under the ESA, is found in only six stream systems that drain into two Choctawhatchee Bay bayous. Eglin AFB manages about 90 percent of the 457-square-kilometer (176-square-mile) watershed drainage area that historically supported the Okaloosa darter and about 99 percent of the stream length within the darter's current range (U.S. Fish and Wildlife Service [USFWS], 2011). The headwaters of all six drainages are located within the Eglin AFB boundary. The current range-wide total population estimate is 802,668 individuals, with an estimated 625,279 mature adults (USFWS, 2011). Overall, the population is considered stable. Rocky Creek, which is Okaloosa darter habitat, runs through TA C-74. The species is known to occur in the creek section below the KEMTF downrange impact/recovery area. Darter habitat also includes the Wildcat Creek drainage on C-74A and the Sandy Mountain Branch tributary on C-74.

Darters are usually found in and around root masses of streamside vegetation and woody debris. The darter's diet consists primarily of immature larvae of aquatic insects such as true flies (*Diptera* spp.), caddisflies (*Trichoptera* spp.), stoneflies (*Plecoptera* spp.), and mayflies (*Ephemeroptera* spp.). Spawning occurs from late March to October, with the greatest amount of activity taking place during April. Spawning occurs in beds of clean, current-swept macrophytes (large aquatic plants). Each spawning act typically results in the release of one or two eggs. Darters do not provide parental care. Little is known about the development of darters after hatching.

The *Okaloosa Darter Recovery Plan* identifies several factors as contributing to population decline and range reduction (USFWS, 1998). Past land management and infrastructure-related activities on Eglin AFB and surrounding areas have degraded or eliminated stream habitat by smothering refugia or spawning sites due to excessive erosion, altered hydrology, or impaired water quality. Accelerated soil erosion and stream sedimentation can be particularly detrimental to aquatic insect prey species, which depend on a gravelly streambed that is relatively free of soil sediments. Sediments can quickly fill in and cover gravel bottoms, which destroys habitat and

may result in immediate species declines. Competitive interactions between the Okaloosa darter and its congener, the brown darter (*Etheostoma edwini*), are also thought to pose a threat as the introduced brown darter expanded its range into that of the Okaloosa darter. In addition, beaver activity has eliminated habitat by impounding streams and also resulted in altered water quality (USFWS, 2011).

3.2 RED-COCKADED WOODPECKER

The red-cockaded woodpecker (RCW) excavates cavities in live longleaf pine trees. Due to the preservation of continuous longleaf pine forests on Eglin AFB, the Eglin Range has one of the largest remaining populations of RCWs in the country. The USFWS identified Eglin AFB as 1 of 13 primary core populations for the RCW (USFWS, 2003). In 2009, the RCW population on Eglin AFB reached the designated recovery goal of 350 potential breeding groups (PBGs), and reconsultation with USFWS was completed for future management of the species. In addition to the goal of 350 PBGs, Eglin Natural Resources personnel have developed a long-term goal of 450 PBGs in order to allow for more mission flexibility. The current RCW population size on Eglin AFB (as of the end of 2014) is 491 active clusters and 435 PBGs.

The RCW population on Eglin AFB is divided into an eastern subpopulation, which is composed of all clusters east of Highway 85, and a western subpopulation, which is composed of all clusters west of Highway 85. The two populations are demographically separate, and each subpopulation is in a different state of health. The western subpopulation is large and increasing (350 PBGs in 2014); the eastern subpopulation is smaller (85 PBGs in 2014) but is stable.

Eglin AFB maintains location information for active RCW cavity trees and foraging habitat around active clusters of RCW cavities. Active RCW cavity trees do not occur within the TA C-74 boundary. However, one inactive tree is present within TA C-74A (Figure 2). A number of active and inactive cavity trees occur north, east, and southeast of the TA. A total of about 15 acres of RCW foraging area occurs on and immediately adjacent to the northern portion of the TA. High-quality RCW forage habitat consists of open pine stands with an average tree diameter at breast height of 10 inches and larger. While 100 acres of mature pine is sufficient for some groups, birds commonly forage over several hundred acres where habitat conditions are not ideal. Additional requirements for good quality habitat include the presence of forbs and bunchgrasses in the understory and sparse to no hardwood in the midstory. Site index conditions are poor due to sterile soils on Eglin AFB, and Eglin Natural Resources has determined that RCW groups on the base utilize large areas for foraging habitat; thus, Eglin AFB generally manages for 300 acres per cluster.

Biological Information

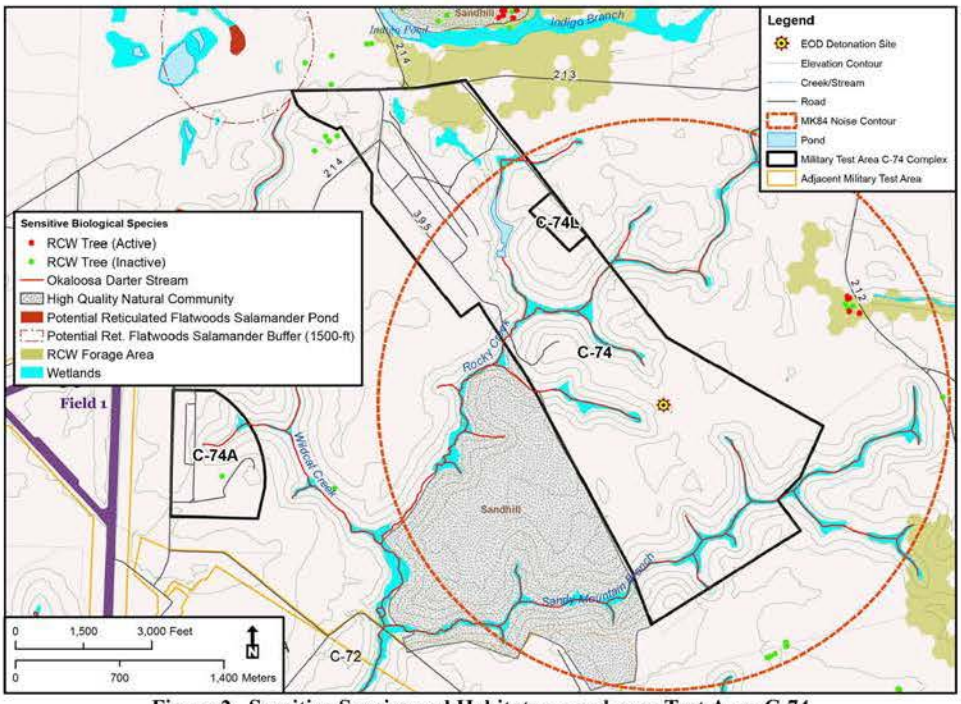

Figure 2. Sensitive Species and Habitats on and near Test Area C-74

3.3 EASTERN INDIGO SNAKE

The eastern indigo snake is the largest nonvenomous snake in North America. The primary reason for its listing is population decline resulting from habitat loss and fragmentation. Movement along travel corridors between seasonal habitats exposes the snake to danger from increased contact with humans. Indigo snakes frequently utilize gopher tortoise burrows or the burrows of others species for overwintering. The snake frequents flatwoods, hammocks, stream bottoms, riparian thickets, and high ground with well-drained, sandy soils. The indigo snake could occur anywhere on the Eglin Range because it uses such a wide variety of habitats. However, the species is extremely uncommon on the range, with only 29 sightings between 1956 and 1999 and no reported sightings since 1999 (U.S. Air Force, 2013). Most of these snakes were seen crossing roads or after being killed by vehicles. There is one historical sighting on the test area, near TA C-74L. It is difficult to determine a precise population number or even an estimate of the number of indigo snakes due to the secretive nature of the species.

3.4 GOPHER TORTOISE

The gopher tortoise is currently a candidate species under the ESA. A 2011 Federal Register notice documented the 12-month finding on a petition to list the gopher tortoise as threatened in

the eastern portion of its range (east of the Mobile and Tombigbee Rivers in Alabama). The review found that listing of the gopher tortoise is warranted; however, listing is currently precluded by higher priority actions, and a proposed rule to list the gopher tortoise will be developed as priorities allow. In December 2008, all Department of Defense entities, as well as state agencies and other nongovernmental organizations, signed a Candidate Conservation Agreement with the USFWS that defines what each agency will voluntarily do to conserve the gopher tortoise and its habitat.

The gopher tortoise is found primarily within the Sandhills and Open Grassland ecological associations on the Eglin Range, where it excavates a tunnel-like burrow for shelter from climatic extremes and refuge from predators. The primary features of good tortoise habitat are well-drained sandy soils, open canopy with adequate sunlight, and abundant food plants (forbs and grasses). Prescribed fire is often employed to maintain these conditions. Nesting occurs during May and June, and hatching occurs from August through September. Gopher tortoise burrows serve as important habitat for many other species, including the federally listed eastern indigo snake. Although no gopher tortoises have been identified on TA C-74, the test area open grassland/shrubland provides ideal tortoise habitat.

4. PROPOSED ACTION

The Proposed Action consists of implementation of the actions identified as the Preferred Alternative in the *Test Area C-74 Complex Range Environmental Assessment*. The major mission activities potentially conducted under the Preferred Alternative include sled track operation, gun testing, arena testing, static munitions testing, gunnery ballistics testing, munitions analysis, and disposal of unexpended live munitions. Each of these actions is conducted at either a specific TA or at the EOD site, as described below.

4.1 TEST AREA C-74

The activities potentially conducted at TA C-74 are operation of the KEMTF, gun testing, arena testing, and static munitions testing. Each of these activities is described below.

4.1.1 Kinetic Energy Munitions Facility (KEMTF) Operation

The KEMTF is a 2,000-foot, dual-rail, inclined sled track used to evaluate the performance of various test items, which primarily consist of live and inert munitions such as bombs, and rocket motors (about 79 percent of items tested are rocket motors). The munitions are accelerated along the track to operational velocities by rocket-powered sleds. Munitions are accurately delivered at the required velocity against targets of various sizes, shapes, and densities. A variety of testing is performed under varying conditions and in different directions on the track. Sled track missions primarily involve ballistics testing of live or inert munitions that are propelled down the track into a stationary target, usually at the southern end. Reverse ballistics testing may also be performed, where targets are propelled into a stationary test item. Aeroballistics testing consists of test items being launched from the sled. During simulated dispersion testing, the end of the track is elevated to propel the test item into the air and into a target.

A variety of targets are used for sled track testing. At the northern end of the track, Tactical Target 1 is constructed of reinforced concrete and consists of five rooms. One of the rooms is reusable. The southeastern wall of the reusable room is positioned for impact by munitions propelled on the KEMTF and can be replaced after impact. At the southern end of the track, targets of varying sizes, shapes, and thicknesses are available, including simulated walls, formed earth, and/or concrete slabs. Targets are designed for the item being tested. Reinforced concrete slabs (any thickness up to 10 feet) are poured on-site and can be positioned to simulate any hardened target. These concrete slabs often weigh as much as 160 tons and can be positioned next to each other if a greater thickness is needed.

Most test items are released from the sled, propelled through targets, and land downrange. The items are recovered and analyzed at TA C-74A, Munitions Analysis Facility. If there is a misfire, test items may travel beyond the target to distances ranging from a few hundred feet to over a mile. If an item lands on a side slope in proximity to a stream, a cable is used to drag the item to flat areas for retrieval. No wheeled or tracked vehicles are driven onto stream slopes to recover items. For heavier items that "plow" the ground, smoothing and recontouring practices are used to repair surface damage. Smaller, inert items near streams may be left in place if

recovery is not required. Eglin Natural Resources is contacted immediately if an item is located within a stream or wetland.

4.1.2 Gunnery Testing

Gun testing at TA C-74 falls into two categories. The first method involves shooting a gun at a target in order to analyze the munitions effects. This is only done when the material/construction of the target would be appreciably easier at TA C-74 than at other ranges. The second method consists of firing a weapon downward through concrete to test the penetrating ability at different angles.

4.1.3 Arena Testing

Arena testing encompasses a large variety of activities, including bullet impact testing, slow/fast cook-off testing, warhead damage assessment, and static detonation of an embedded/placed warhead. These tests usually require remote detonation and extensive instrumentation with camera and video coverage. Either the areas southeast or northwest from the ends of the sled track can be used. Arena testing has not occurred since 2008, but the test area retains the capability.

4.1.4 Static Munitions Testing

Static munitions testing occurs occasionally within an area on the western side of TA C-74. For example, in 2005, a 1,000-pound warhead was tested after being inserted into a drilled cavity within a 160-ton concrete block. However, no static tests were reported at the test area for fiscal years 2011 through 2014.

4.2 TEST AREA C-74L

TA C-74L has been used for gunnery ballistics testing, which consists of gun and ammunition testing (automatic and single shot) with high-explosive incendiary rounds. Testing has been conducted on new or modified guns or on the munitions fired by a gun. The most common testing historically documented is "life cycle" testing, which tests war reserve ammunition to ensure that it still meets specifications. War reserve ammunition routinely sits on shelves for many years, requiring periodic sampling to ensure its serviceability. A concrete and steel backstop to contain the fired rounds is available at the site. The testing gun was removed from TA C-74L in 2012, and there are currently no plans to return it to the site. However, the possibility of future use is retained.

4.3 TEST AREA C-74A

TA C-74A has facilities that are used to analyze the effects of impact on the internal condition of explosive munitions, high-explosive fill, and structures. Nondestructive (x-ray) or destructive (sectioning) means may be used for analysis. In some cases, an industrial saw is used through remote control to section munitions for analysis. The x-ray machine is housed in the range

control building. TA C-74A is also used to temporarily store test munitions that are to be expended elsewhere on the Eglin Range. No ordnance is expended on TA C-74A.

4.4 EXPLOSIVE ORDNANCE DISPOSAL (EOD) SITE

An EOD site is located south of Rocky Creek, approximately 300 feet off an unpaved road. Live munitions that are not used during KEMTF testing are detonated at this area; they are not stored for later use. The EOD site is composed of two detonation pits that are approximately 15 and 30 feet in width. The site is located on a hill terrace plateau, with adjacent lands sloping inward toward the pits. During a recent site survey, no evidence of soil erosion was identified near the site. In addition, no concentrations of detonation debris were identified.

4.5 VEGETATION AND ROAD MAINTENANCE

Vegetation and road maintenance activities are conducted periodically to maintain necessary conditions on the TA C-74 Complex. Vegetation control is necessary in some areas of the Complex in order to maintain line-of-sight for instrumentation, observe where test items land, and aid in rapid recovery of test munitions. A combination of maintenance methods is used, including bush hogging, mowing, herbicide use, and prescribed fire. In general, C-74 is maintained as grassland by bush hogging the upland portions once every 12 to 18 months. Roller drum chopping, which has the potential to cause significant soil erosion, was discontinued on TA C-74 in the 1990s. On C-74A and C-74L, vegetation around buildings and along roads is mowed but allowed to grow elsewhere.

Road maintenance on TA C-74, consistent with other areas of Eglin, is dependent on the classification of a given road. Paved roads are inspected and possibly stabilized more frequently than unpaved roads. Unpaved roads are primarily used to access targets and instrument test sites and are not regularly maintained. The Rocky Creek road crossing has been stabilized through placement of geosynthetic materials and associated rock.

4.6 SUMMARY OF EXPENDABLES

The annual number of expendables associated with each of the major mission categories (sled track operations, static test detonations, and gunnery ballistics testing) conducted on the TA C-74 Complex is shown in Table 2. These numbers represent the maximum quantity of expendables associated with the Preferred Alternative described in the *Test Area C-74 Complex Range Environmental Assessment*. Multiple munitions are used during a single test event in most cases. However, each TA C-74 arena gunnery ballistics test is considered a single event. EOD explosive charges are captured in the table as static munitions of 1 pound or less.

Proposed Action

Table 2. Annual Test Area C-74 Complex Mission Expenditures

Mission Activity	Number of Test Events	Number of Expenditures
KEMTF Sled Track Operations		
Rocket motors	50	450
Inert munitions		30
Live munitions		20
Static Munitions Testing		
Large munitions (>50 pounds NEW)	20	20
Small munitions (<50 pounds NEW)		15
Other (1 pound or less NEW)		140
Gunnery Ballistics Testing		
C-74 Arena Test Area, inert munitions	30	30
TA C-74L gunnery	60	15,000

KEMTF = Kinetic Energy Munitions Test Facility; NEW = net explosive weight; TA = test area

5. DETERMINATION OF IMPACTS

5.1 OKALOOSA DARTER

Potential impacts to the Okaloosa darter are primarily associated with sled track operations, including potential deposition and/or retrieval of expendables that may land directly in Rocky Creek, on the slope habitat adjacent to the stream, or on upland portions north or south of the creek. Other potential impact categories include EOD munition detonations, wildfire suppression, and test area maintenance activities. Approximately 2,000 linear feet of Rocky Creek (Okaloosa darter habitat) occurs on TA C-74, beyond the southeast end of the sled track. Test items deposited directly in the stream could strike individual darters, resulting in mortality or injury. Water quality could also be affected by sedimentation or increased water turbidity resulting from expendables that disturb bottom sediments, and by gouging of the soil and/or vegetation removal during retrieval of items that land in upland areas. The number of darters inhabiting the stream section on TA C-74 is unknown. Recent estimates suggest a density of about three darters per meter of occupied stream habitat (USFWS, 2011), although occurrence is not likely uniform due to the patchiness of quality habitat. However, the likelihood of a direct physical darter strike is considered low due to the infrequency with which test items have historically entered the stream. Test personnel state that items rarely impact the water directly, with only one instance remembered in recent years. In addition, the area potentially affected represents a small portion of the entire range of the species on Eglin AFB. Therefore, although difficult to quantify, the likelihood of a direct strike is considered low. If a test item were deposited in the stream, Eglin Natural Resources personnel would be consulted before removal. The item would first be evaluated for appropriateness of removal (impacts could be less in some cases if the item were left in place). If retrieval is preferred, items will be removed in such a way as to minimize further bottom disturbance and sedimentation. Turbidity caused by initial deposition and/or removal would be short term and would not be expected to cause substantial impacts to the species. The previous Biological Opinion for TA C-74 activities (USFWS, 2002) addressed the potential for erosion and sedimentation of darter streams and identified reasonable and prudent measures and terms and conditions designed to reduce impacts. In addition, Eglin AFB identified a number of conservation measures intended to reduce effects on the darter. In general, these measures include using the least intrusive measures available for test item recovery (regardless of whether items are deposited at upland, stream slope, or aquatic areas) and restoring damaged areas. A comprehensive list of required conservation measures is provided in Section 5.5. Eglin AFB has addressed general erosion issues on the TA by stopping the practice of roller drum chopping and by implementing road stream crossing repair and stabilization (see the discussion of maintenance practices below). No soil erosion damage to slope areas was observed during a site visit in February 2014.

Due to detonation of live weapons by EOD teams at the existing detonation pits, loose sediments occur at the site. Generally, there would be potential for erosion and deposition of sediments into surrounding surface waters in such circumstances. However, the local topography at the EOD site is such that the ground slopes inward toward the pits, and erosion of sediments into Rocky Creek is highly unlikely. There would be no significant impacts to the Okaloosa darter resulting from live weapon demolition.

Determination of Impacts

Wildfires typically do not damage stream slopes on Eglin AFB, as only the upper portions of vegetation is burned; the root system is usually left intact and regrowth occurs soon after the fire. It is possible that wildfires on the test area could require fire suppression activities such as the plowing of fire lines, which could result in soil erosion and sedimentation of aquatic habitats. However, as a protective measure, streams (including Okaloosa darter streams), riparian buffers, and wetlands on Eglin AFB are classified as biologically sensitive areas and are, therefore, designated as limited suppression areas. Within these sensitive areas, plows are not used off range roads for fire suppression except in extreme conditions and with the approval of the Wildland Fire Program Manager (WFPM), the Natural Resources Manager, or their designee, thereby minimizing the potential for damage to aquatic habitats. If wildfire conditions are such that plowed lines are deemed necessary in these areas, the WFPM, Assistant WFPM, Chief of Natural Resources, or their designee will approve the use and location of the lines. For any darter streams affected by emergency wildfire control efforts, damage would be repaired in coordination with the USFWS, and Eglin AFB would submit an incident report detailing suppression and rehabilitation activities.

Surface waters supporting the Okaloosa darter could potentially be impacted by road and vegetation maintenance activities. The primary concern is the potential for erosion and associated stream sedimentation. Road maintenance activities that destabilize stream channel slopes, change stormwater flow characteristics, or directly impact stream channels could damage darter habitat. Adherence to the road and soil erosion management practices presented in Chapter 5, *Management Practices*, of the Range Environmental Assessment would reduce the potential for impacts to the darter resulting from road maintenance activities. Vegetation control, which is necessary to suppress the density and growth of vegetation on the test area, could also result in soil erosion and stream sedimentation. Previously, roller drum chopping caused extensive damage to vegetation on the test area. This practice is no longer used and has been replaced with bush hog mowing, which generally leaves root systems in place. Soil dispersion or compaction can be caused by bush hog mowers (particularly during wet periods), and vegetation can "ball up" along the edges of the bush hog, creating ruts in the soils. However, bush hogging is preferred to other vegetation control methods, as it results in substantially less overall potential for soil impacts. Erosion control efforts, including discontinuation of roller drum chopping, have been in place on the test area since 2002 and have alleviated much of the soil erosion potential. With continuing efforts and implementation of the management actions provided in the Range Environmental Assessment, it is not anticipated that vegetation maintenance activities would result in significant impacts to aquatic habitats or sensitive species such as the Okaloosa darter.

In summary, sled track operations could result in direct test item strikes to Rocky Creek and possibly to individual Okaloosa darters and could result in soil erosion and associated water quality impacts due to deposition and/or retrieval of test items in terrestrial areas. However, direct strikes are considered unlikely, and implementation of the best management practices listed above will reduce the potential for sedimentation. Substantial impacts due to erosion resulting from EOD operations, wildfire suppression, or maintenance activities are not expected. Therefore, activities at the TA C-74 Complex **may affect but are not likely to adversely affect** the Okaloosa darter.

Determination of Impacts

5.2 RED-COCKADED WOODPECKER

RCW foraging habitat, active cavity trees, and inactive cavity trees are located on and/or adjacent to the north, east, and southeast of TA C-74. Therefore, RCWs have the potential to be affected by test-related impacts, including noise disturbance, direct munitions strikes, and wildfire. Sled track operations, gun and munitions testing, and detonations at the EOD site could potentially affect RCWs due to noise harassment and direct impacts (potential strikes). There would be no intentional tree or habitat removal. The *Red-Cockaded Woodpecker Programmatic Biological Opinion* (PBO) (USFWS, 2013) established a process to evaluate potential impacts to RCWs and determine restrictions for Eglin AFB mission activities. The TA C-74 Complex has a long history of loud noise from test activities and, therefore, RCWs that have established around the TA appear to be acclimated to such activities. No difference in group size or behavior of RCWs has been observed across Eglin AFB near the noisier test areas versus areas without noise-producing operations. RCWs on Eglin AFB have demonstrated a degree of adaptability to noise and probably have become habituated to the noise of munitions at least to some extent and continue to nest successfully in close proximity to the test areas. Suitable habitat appears to outweigh any negative influences associated with noise. Individuals exposed to noise may exhibit reactions such as a startle reflex or temporary flushing, but population-level effects are not anticipated. Direct impacts due to sled track operation are unlikely, as the majority of test items are directed in a southeastern direction, away from the nearest foraging area. Direct physical strike of an individual bird or cavity tree is considered unlikely.

There is some potential for firing or testing of live munitions to cause wildfire that could impact RCW foraging or cavity trees near the test area or, in the worst-case scenario, trees containing nests. Due to the potential for wildfire, activities would be conducted in accordance with the following requirements provided in the PBO:

- Test area personnel must check the fire danger rating on days that live munitions are scheduled to be used, and follow the *Eglin Wildfire Specific Action Guide* restrictions for pyrotechnics use by class day.
- Test Area personnel must immediately notify the Joint Test & Training Operations Control Center and Eglin's Fire Dispatch of any wildfire observed.

Operations at the TA C-74 Complex will be conducted in accordance with conservation measures and terms and conditions described in the PBO. Eglin AFB therefore believes that test activities at the TA C-74 Complex **may affect but are not likely to adversely affect** the RCW.

5.3 EASTERN INDIGO SNAKE

Potential impacts to eastern indigo snakes are similar to those described for the gopher tortoise and include direct strikes or habitat alteration due to sled track operations, EOD detonations, wildfire suppression, and maintenance activities. Impacts to gopher tortoise burrows could indirectly affect indigo snakes by decreasing the number of refuges available. Due to the apparently low number of indigo snakes on or near the Eglin Reservation, as well as the sporadic schedule of test events, direct strikes are considered unlikely. As discussed above, direct impacts to tortoise burrows are also considered unlikely. Test area personnel will halt activities and

contact Eglin Natural Resources if an indigo snake is sighted. Therefore, test activities on TA C-74 **may affect but are not likely to adversely affect** the eastern indigo snake.

5.4 GOPHER TORTOISE

Gopher tortoises could potentially be affected by sled track operations due to direct strikes to individuals or burrows and by EOD munition detonations, wildfire suppression, and test area maintenance activities. Currently, gopher tortoise burrows are not documented in the area potentially affected by test items, and no burrows were observed near the EOD site during a field survey in September 2014. However, comprehensive surveys have not been conducted, so gopher tortoises may be present on C-74, as good habitat is present. The potential for a burrow or tortoise above ground to be struck by a test item or to collapse due to EOD detonations is unquantified but is considered low. In addition, impacted burrows could be re-excavated in many cases. Similar testing has occurred for many years, and any tortoises in the area are likely acclimated to noise and other types of disturbance associated with the test area. Test area personnel would be instructed to avoid burrows when retrieving test items.

Incidental contact with vehicles/equipment and ground-disturbing activities could result in crushing gopher tortoises or their burrows. Individual tortoises, burrows, or egg clutches could potentially be impacted during fire suppression activities, such as vehicle operation and fireline plowing, and during road and vegetation maintenance activities. However, given the relative infrequency of wildfires on the test area requiring suppression actions and the infrequency of maintenance activities, it is not expected that the risk would be significant. Burrows must be avoided by 25 feet. Eglin AFB requires that personnel be informed that if a gopher tortoise is sighted, personnel must allow the animal to leave the area undisturbed and immediately report the sighting to the Natural Resources Office. Site-specific surveys would be conducted by Eglin's Natural Resources Office personnel for any activities that result in new ground disturbance (target area clearing, etc.). If tortoise burrows are found to conflict with mission activities and cannot be avoided by 25 feet, the tortoise(s) would be relocated in accordance with Florida Fish and Wildlife Conservation Commission (FWC) guidelines. Therefore, test activities on TA C-74 would not significantly impact the gopher tortoise.

5.5 CONSERVATION MEASURES

The following list provides the conservation measures that will be implemented to avoid or minimize the potential for impacts to species listed under the ESA.

- If any test items land in Okaloosa darter streams, Eglin's Natural Resources Office would be contacted immediately. Natural Resources Office personnel would submit an incident report to the USFWS to include rehabilitation activities. The proponent would be responsible for repairing damage to the stream by:
    - Using the least intrusive method available for test item retrieval.
    - Removing the test item along the same path that it entered the area to reduce habitat disturbance.

Determination of Impacts

- Avoiding use of heavy equipment within the stream and along stream banks.
- Repairing any damage to stream banks.
- Repairing any damage to erosion control measures along the stream.
- Monitor the effectiveness of any restoration activities.

- All C-74 activities must avoid gopher tortoise burrows by 25 feet. Site-specific surveys must be conducted by Eglin's Natural Resources Office personnel for any activities that result in new ground disturbance (target area clearing, etc.). If tortoise burrows are found to conflict with mission activities and cannot be avoided by 25 feet, the tortoise(s) would be relocated in accordance with FWC guidelines.
- Comply with all conservation measures and terms and conditions described in the *Red-Cockaded Woodpecker Programmatic Biological Opinion* (USFWS, 2013) and in the *Biological Opinion for Mission Activities Within Test Area C-74* (USFWS, 2002).
- If an eastern indigo snake or gopher tortoise is sighted on the test area, halt testing activities and contact Eglin's Natural Resources Office.
- Test area personnel must check the fire danger rating on days that live munitions are scheduled to be used, and follow the *Eglin Wildfire Specific Action Guide* restrictions (U.S. Air Force, 2006). Personnel must immediately notify the Joint Test and Training Operations Control Center and Eglin's Fire Dispatch of any wildfire observed.
- Avoid fire suppression activities in or near Okaloosa darter streams. For any darter streams affected by emergency wildfire control efforts, damage would be repaired in coordination with the USFWS, and Eglin would submit an incident report detailing suppression and rehabilitation activities.
- Avoid road and vegetation control activities that would cause erosion into Okaloosa darter streams.

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6. CONCLUSION

The Air Force believes that, although minor disturbance and potential for direct strikes exist, there is no substantial risk to individuals or populations of federally protected species on or near the TA C-74 Complex. Test activities **may affect but are not likely to adversely affect** the Okaloosa darter, red-cockaded woodpecker, gopher tortoise, and eastern indigo snake. Test activities would not significantly impact the gopher tortoise. Conservation measures are provided in Section 5.5.

The USFWS will be notified immediately if any of the actions considered in this BA are modified or if additional information on listed species becomes available, as a reinitiation of consultation may be required. If impacts to listed species occur beyond what has been considered in this assessment, all operations will cease and the Service will be notified. Any modifications or conditions resulting from consultation with the Service will be implemented prior to commencement of activities. Eglin's Natural Resources Office believes this fulfills all requirements of the ESA and no further action is necessary.

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