20100819001

20 August 2010

Mr. Eliud Burgos
AFCEE/EXEE, Building 171
485 Quentin Roosevelt Road
San Antonio, Texas 78226-1845

Subject: **Contract No. FA8903-08-D-8779, Task Order No. 0058**
Submittal: *Test Area B-75 Final Range Environmental Assessment, Revision 1* and Finding of No Significant Impact (FONSI)

Dear Mr. Burgos:

Science Applications International Corporation is pleased to submit one electronic copy of the *Test Area B-75 Final Range Environmental Assessment, Revision 1* and FONSI. Mr. Terry Perkins has received two printed copies and two CDs of the document, per his request. Two CDs and two printed copies of the responses to comments have been submitted to Ms. Lauren Milligan at the Florida State Clearinghouse.

Should you have any questions regarding this submittal, please feel free to contact me at (850) 609-3486.

Sincerely,
SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

Amy L Sands

Amy Sands
Project Manager

cc: Mr. Terry Perkins, Eglin AFB (2 printed copies, 2 CDs)
Dr. Eric Banks, SAIC AFCEE Program Manager (letter only)
SAIC Central Records Center
SAIC Project File

Report Documentation Page

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20100819002

20 August 2010

Ms. Lauren Milligan, Clearinghouse Coordinator
Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, Mail Station 47
Tallahassee, Florida 32399-3000

Subject: *Eglin Air Force Base, Florida, Test Area B-75 Final Range Environmental Assessment, Revision 1*

Dear Ms. Milligan:

On behalf of the U.S. Air Force, Science Applications International Corporation is pleased to submit 2 CDs of the Final Test Area B-75 Range Environmental Assessment (REA), Revision 1 and 2 hard copies of the Air Force responses to comments on the Test Area B-75 Draft REA. The Air Force responses to comments can also be found in Appendix H, *Public Involvement*, of the Final Test Area B-75 REA. The U.S. Air Force prepared this document to conform to the requirements of the National Environmental Policy Act.

If you have any questions, please contact Mr. Terry Perkins, Eglin Air Force Base Project Manager, at (850) 882-9906.

Sincerely,
SCIENCE APPLICATIONS INTERNATIONAL CORPORATION

Amy L Sands

Amy Sands
Project Manager

cc: Ms. Patti Garcia, SAIC Contracts (letter only)
SAIC Central Records (1 copy)
SAIC Project File (letter only)

FINDING OF NO SIGNIFICANT IMPACT
FOR

TEST AREA B-75 RANGE ENVIRONMENTAL ASSESSMENT ON EGLIN AIR FORCE BASE, FLORIDA RCS 99-003 Revision 1, 2010

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:

- U.S. Air Force *Environmental Impact Analysis Process (EIAP)* 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) B-75 on Eglin Air Force Base (AFB), Florida. That August 2010 REA is hereby incorporated by reference into this finding.

DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Proposed Action

The Proposed Action is for the 46th Test Wing (46 TW) commander to establish a new authorized level of activity for TA B-75 that is based on an anticipated maximum usage. Demonstrating that the individual and cumulative effects of this usage level do not have significant environmental impact is the method for establishing the maximum threshold baseline, which is being identified as the Range EIAP Baseline. The environmental analysis is accomplished by evaluating the effect that the military mission activities and expendables have on Eglin AFB's natural, physical, and cultural environment.

The No Action Alternative and Alternative 1 are not expected to be sufficient to account for the expected growth of testing and training activities at Eglin AFB over the next 10 years. Therefore, Alternative 2 was selected as the Preferred Alternative to adequately cover the environmental analysis needed to support potential increased testing and training requirements as they occur.

No Action Alternative

This alternative is defined as authorizing the level of activity approved in the 2000 TA B-75 Programmatic Environmental Assessment, which authorized a 100-percent increase in test missions and associated expendables over the baseline level captured in the Fiscal Years 1995-1997 (FY 1995–1997) within the Range Utilization Reports and anticipated mission additions.

Alternative 1

Alternative 1 would authorize the current level of activity plus foreseeable future activities. The current level of activity is defined as the maximum annual expenditure for each type of expendable from FY 1998 through FY 2008; this approach accounts for periods of low or no activity of a certain mission. Future TA B-75 expenditures will include increased munitions expenditures associated with ground training activities from several new user groups including the 23rd Special Tactics Squadron, the 1st Special Operations Support Squadron, the 96th Ground Combat Training Squadron, and the Joint Strike Fighter. The use of high explosives (HE) for testing or training on TA B-75 would be considered on a case-by-case basis and must be approved by the 46 TW in advance of mission activities. This alternative would be implemented using management actions identified in the REA.

Alternative 2

This alternative is defined as authorizing the level of activity as described under Alternative 1, plus a 300-percent increase in mission activity (testing and training), including management actions identified in the REA. Similar to Alternative 1, any use of HE for testing or training on TA B-75 would be considered on a case-by-case basis and must be approved by the 46 TW in advance of mission activities. A 300-percent increase was chosen as a likely maximum surge increase in military testing and training during a national defense contingency. This alternative would be implemented using management actions identified in the REA.

Preferred Alternative

The Preferred Alternative is Alternative 2, which allows a 300-percent increase in TA B-75 operations over the current level of activity plus foreseeable future activities. Implementation of management actions will allow a surge in test and training activities while minimizing impacts to environmental and natural resources.

ENVIRONMENTAL IMPACTS

Analysis was conducted to determine the potential impacts to the human and natural environment resulting from the No Action Alternative, Alternative 1, and Alternative 2. No significant impacts to resources have been identified, provided the management actions detailed in Section 2.5 of the REA would be implemented. A detailed discussion of issues analyzed and management strategies used to reduce potential impacts is given in Chapter 4 of the REA.

PUBLIC NOTICE

A public notice was published in the *Northwest Florida Daily News* on 25 May 2010 inviting the public to review and comment upon the REA and Draft Finding of No Significant Impact. The public comment period closed on 8 June 2010 and no public comments were received. State agency comments were received and have been addressed in Appendix H, *Public Involvement*, of the Final REA.

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.

DAVID H. MAHARREY, JR., Colonel, USAF
Commander, 96th Civil Engineer Group

15 SEP 10
Date

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EGLIN AIR FORCE BASE
Florida

TEST AREA B-75

FINAL RANGE ENVIRONMENTAL ASSESSMENT (REA), REVISION 1

AUGUST 2010

TEST AREA B-75

FINAL RANGE ENVIRONMENTAL ASSESSMENT (REA), REVISION 1

Submitted to:

96 CEG/CEVSP
Environmental Analysis Section
Eglin Air Force Base, Florida

AUGUST 2010

PRINTED ON RECYCLED PAPER

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LIST OF ACRONYMS, ABBREVIATIONS, AND SYMBOLS

1 SOSS	1st Special Operations Support Squadron
46 TW	46th Test Wing
46 TW/XP	46th Test Wing, Plans Office
96 CEG/CESVH	96th Civil Engineer Group/Cultural Resources Branch
96 CEG/CEVSN	96th Civil Engineer Group/Natural Resources Section
96 CEG/CEVSP	96th Civil Engineer Group/Environmental Analysis Section
96 CES/CED	96th Civil Engineering Squadron
96 GCTS	96th Ground Combat Training Squadron
AAC	Air Armament Center
AFB	Air Force Base
AFI	Air Force Instruction
AFPD	Air Force Policy Directive
AFSOC	Air Force Special Operations Command
AICUZ	Air Installation Compatible Use Zone
ALARNG	Alabama Army National Guard
ANFO	Ammonium Nitrate Fuel Oil
AWC	Air Warfare Center
BDU	Bomb Dummy Unit
CATEX	Categorical Exclusion
CDNL	C-weighted Day-Night Sound Level
CE	Civil Engineering
CEC	Cation Exchange Capacity
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
CHABA	Committee on Hearing, Bioacoustics, and Biomechanics
CO	Carbon Monoxide
CS/CSS	Combat Support/Combat Service Support
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	Decibels
dBC	C-weighted Decibels (measures impulsive sounds)
dBP	P-weighted Decibels (actual noise level)
DNL	Day–Night Average Sound Level
DoD	Department of Defense
EBD	Environmental Baseline Document
ECM	Electronic Counter Measure
EIAP	Environmental Impact Analysis Process
EO	Executive Order
EOD	Explosive Ordnance Disposal
EPCRA	Emergency Planning and Community Right-to-Know Act
ERP	Environmental Restoration Program
ESA	Endangered Species Act
FAC	Florida Administrative Code
FAR	Federal Aviation Regulation
FDEP	Florida Department of Environmental Protection
FEMA	Federal Emergency Management Agency
FICON	Federal Interagency Committee on Noise
FICUN	Federal Interagency Committee on Urban Noise
FWC	Florida Fish and Wildlife Conservation Commission
FWPCA	Federal Water Pollution Prevention and Control Act
FY	Fiscal Year
GBU	Guided Bomb Unit
HE	High Explosive
HERD	High Explosive Research Division
HM	Hazardous Material

LIST OF ACRONYMS, ABBREVIATIONS, AND SYMBOLS, CONT'D

HW	Hazardous Waste
Hz	Hertz
INS	Invasive Non-native Species
IWR	Impaired Waters Rule
JSF	Joint Strike Fighter
km	Kilometers
lbs	Pounds
MBTA	Migratory Bird Treaty Act
µg/m³	Micrograms per Cubic Meter
mg	Milligrams
MLRS	Multiple Launch Rocket System
MMPA	Marine Mammal Protection Act of 1972
MRTFB	Major Range Test Facility Base
MSL	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NEI	National Emissions Inventory
NEPA	National Environmental Policy Act
NEW	Net Explosive Weight
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO_x	Nitrogen Oxides
NRHP	National Register of Historic Places
ORM	Operational Risk Management
PEA	Programmatic Environmental Assessment
pH	Potential of Hydrogen (a measure of acidity)
PK_{15}(met)	Peak Noise Exceeded by 15 Percent of Firing Events
PM	Particulate Matter
PM_{10}	Particulate Matter with a Diameter Less Than or Equal to 10 Microns
ppm	Parts per Million
RBC	Risk-Based Criteria
RCRA	Resource Conservation and Recovery Act
RCW	Red-cockaded Woodpecker
REA	Range Environmental Assessment
ROI	Region of Influence
RUR	Range Utilization Report
SABRE	Shallow Water Assault Breaching
SDZ	Surface Danger Zone
SEL	Sound Exposure Level
SHPO	State Historic Preservation Officer
SO_x	Sulfur Oxides
SPCC	Spill Prevention, Control, and Countermeasures
SPL	Sound Pressure Level
SW	Solid Waste
TA	Test Area
TRI-DDS	Toxic Release Inventory-Data Delivery System
TT	Training Target
USACHPPM	U.S. Army Center for Health Promotion and Preventive Medicine
USACE	U.S. Army Corps of Engineers
USC	United States Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UXO	Unexploded Ordnance
VOC	Volatile Organic Compound

1. PURPOSE AND NEED FOR ACTION

1.1 INTRODUCTION

The Eglin Military Complex, located in the northwest Florida panhandle (Figure 1-1), is one of 19 component installations categorized as a Department of Defense (DoD) Major Range Test Facility Base (MRTFB). Eglin Air Force Base (AFB) is situated among four counties: Santa Rosa County, Okaloosa County, and Walton County. In addition, Cape San Blas, part of a peninsula in Gulf County, is also located on a part of Eglin AFB. Eglin AFB's primary function is to support research, development, test, and evaluation of conventional weapons and electronic systems. It also provides support for individual and joint training of operational units. The Eglin Military Complex currently comprises four components (U.S. Air Force, 2001), which do not include the cantonment or main base areas:

(1) Test Areas/Sites

(2) Interstitial Areas (areas beyond and between the test areas)

(3) The Eglin Gulf Test Range

(4) Airspace (overland and water)

The U.S. Air Force Air Armament Center (AAC) has responsibility for the Eglin Military Complex and for all its users, which include DoD, other government agencies, foreign countries, and private companies. For Range operations, the AAC provides environmental analyses and necessary National Environmental Policy Act (NEPA) documentation to ensure compliance with U.S. Air Force policy and applicable federal, state, and local environmental laws and regulations.

The AAC includes two wings and four directorates that collectively operate, manage, and support all activities on the Eglin Military Complex. The AAC accomplishes its Range operations through the 46th Test Wing (46 TW) with support from the 96th Air Base Wing. The 46 TW commander is responsible for day-to-day scheduling, executing, and maintaining of this national asset. Test Area (TA) B-75 makes up a portion of the Eglin Military Complex and supports a variety of test and training missions. The continued DoD utilization of the Eglin Military Complex requires flexible and unencumbered access to land ranges and airspace, which support all of Eglin AFB's operations.

1.2 PROPOSED ACTION

The Proposed Action is for the 46 TW commander to establish a new authorized level of activity for TA B-75 that is based on an anticipated maximum usage. Demonstrating that the individual and cumulative effects of this usage level do not have significant environmental impact is the method for establishing the maximum threshold baseline, which is being identified as the Range Environmental Impact Analysis Process (EIAP) Baseline. The environmental analysis is accomplished by evaluating the effect that the military mission activities and expendables have on Eglin AFB's natural, physical, and cultural environment.

Figure 1-1. Land and Water Ranges of the Eglin Military Complex

The military mission has been broadly identified as the effector of environmental impacts and Eglin AFB's environment has been identified as the receptor. Evaluation and quantification of this effector/receptor relationship is the scientific basis for the environmental analysis performed in this report.

The **purpose and need of the Proposed Action** is twofold as described in the following:

(1) Purpose: to quickly and efficiently process new programs requesting access to TA B-75 during both routine and crisis situations.

a. Need: to provide military users a quick response to priority needs during war or other significant military involvement, as well as maintain the current approval process for routine uses.

(2) Purpose: to update the NEPA analysis by re-evaluating the mission activities and by performing a cumulative environmental analysis of all mission activities.

b. Need: the need associated with this item is multifaceted and is described below.

Eglin AFB previously performed environmental analysis on mission activities on TA B-75 in the 2000 *Test Area B-75 Final Programmatic Environmental Assessment* (PEA) (U.S. Air Force, 2000). Some of Eglin AFB's mission activities have changed since the original environmental analysis was done, requiring new environmental analysis to be performed. Currently, when approval for a new mission is requested, it may be categorically excluded from additional environmental analysis if it is similar in action to a mission that has been previously assessed and the assessment resulted in a finding of no significant environmental impact. The categorical exclusion (CATEX) designation is in accordance with NEPA and Air Force regulations, 32 Code of Federal Regulations [CFR] 989.13 and Air Force Instruction [AFI] 32-7061).

Since the time that some of these ongoing mission activities were originally assessed, and also since some of the mission activities that are used for CATEX purposes were assessed, changes have occurred at Eglin AFB that could affect environmental analysis. These changes, outlined below, create a need to re-evaluate the NEPA analysis individually and cumulatively.

- Additional species have been given federal- and state-protected status.
- Species that were not previously known to exist at Eglin AFB have been discovered.
- Additional cultural resources have been discovered and documented.
- The population of communities along Eglin AFB's borders has increased.
- Air Force regulations have changed.
- Military missions and weapons systems have evolved.

The analysis performed in this report allows for a cumulative look at the impact on TA B-75 receptors from all mission activities. By implementing an authorized level of activity, Range management will be streamlined and cumulative environmental impacts will be more fully considered.

1.3 SCOPE OF THE PROPOSED ACTION

The region of influence (ROI) for this analysis is TA B-75, which is located on the western side of the Eglin Range Complex in Okaloosa and Santa Rosa Counties, about 15 miles northwest of Eglin Main Base as shown in Figure 1-2. TA B-75 is approximately 4 miles long and approximately 2 miles wide. The test area provides over 6 square miles of continuous land test area.

The mission activities that are included are those events that originate and/or terminate on TA B-75. The air operations that occur in the airspace overlying TA B-75 are not included as part of the scope for this Range Environmental Assessment (REA); the air operations are analyzed cumulatively in the Overland Air Operations REA. However, expendables that are released during air operations, as they impact TA B-75 and the vicinity, are included in this REA.

Missions on TA B-75 are under the purview of the 46 TW. TA B-75 supports a variety of user groups and testing and training activities which are described in detail in Appendix C. Primary user groups include the 96th Security Forces Squadron Training Support, the Alabama Army National Guard (ALARNG), and the Joint Services Explosive Ordnance Disposal Training. Additional information on TA B-75 facilities, target areas, and instrumentation are provided in the *Test Area B-75 Final Environmental Baseline Document*, Chapter 2, Mission Summary (U.S. Air Force, 2007a).

1.4 DECISION DESCRIPTION

The 46 TW desires to authorize a new level of activity for TA B-75, replacing the current authorized level, which is discussed in Section 2.2. A decision is to be made on the *level* of activity to be authorized, which includes changes in mission types, the combination of missions, and the level of intensity of missions. By authorizing a new level of activity and analyzing the effects of that level of activity, future similar actions may be categorically excluded from further environmental analysis. This will save both time and money in the review of proposed actions and will enable users to access TA B-75 more quickly and efficiently. Authorization of a new level of activity will streamline the environmental process, enhancing Eglin AFB's ability to quickly respond to high-priority or crisis requirements.

1.5 ISSUES

Specifically, an issue may be the result of a mission activity or land use activity that may directly or indirectly impact physical, biological, and/or cultural environment resources. A *direct* impact is a distinguishable, evident link between an action and the potential impact, whereas an *indirect* impact may occur later in time and/or may result from a direct impact.

Potential environmental impacts of alternative actions on TA B-75 resource areas were identified through preliminary investigation. Resource areas eliminated from further analysis are discussed in Section 1.5.1. Resource areas identified for detailed analysis are described in Section 1.5.2, with narratives providing a summary of the preliminary screening for potential impacts.

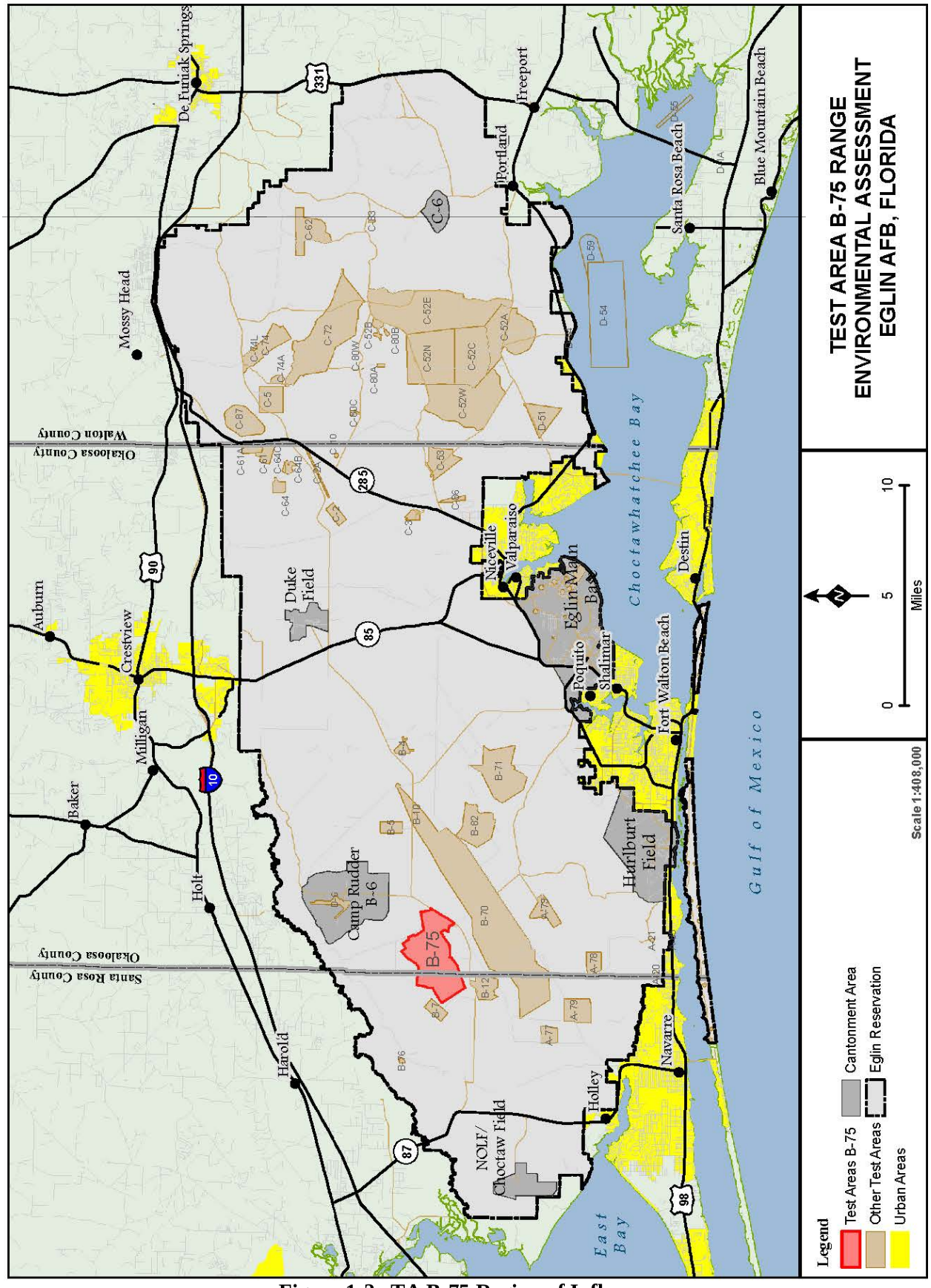

Figure 1-2. TA B-75 Region of Influence

1.5.1 Resource Areas Eliminated from Detailed Analysis

Environmental Restoration Program Sites

No Environmental Restoration Program (ERP) sites or sites subject to land use controls are located within TA B-75; therefore, there are no potential impacts to ERP sites.

1.5.2 Resource Areas Identified for Detailed Analysis

Chemical Materials/Debris

Chemical materials encompass liquid, solid, or gaseous substances that are released into the environment as a result of mission activities; these include organic and inorganic materials that can produce a chemical change or toxicological effect to an environmental receptor. The chemical materials that can accumulate in the environment through repeated use represent the highest potential for environmental impact; for TA B-75, this includes the aluminum from chaff fibers, phosphorus from flares, and lead from munitions.

Debris includes the physical materials that are deposited on the surface of terrestrial or aquatic environments during mission activities, analogous to litter. This category differs from chemical materials by focusing on the physical disturbance rather than the chemical alterations that could result from the residual materials. Examples of debris include shrapnel deposited from bombs and missiles, chaff and flare cartridges, spent brass cartridges, and intact inert bombs. There are no major debris issues for TA B-75 because the debris is periodically removed from the test area in accordance with Eglin Standard Operating Procedures. The potential for the debris to strike an object or organism is covered under the appropriate resource area. Under current practice, munition debris is recovered and/or removed from the ranges for the purpose of storage, reclamation, treatment, and disposal as solid waste. These practices are necessary for compliance with AFI 13-212, which requires the range to be cleared of munition debris on a regular basis.

Soils

Soils within TA B-75 have the potential to be impacted from test and training activities. Analysis addresses the potential for erosion from testing and training activities as well as for munition residue to decrease soil quality by introducing new or additional organic and/or inorganic compounds into the soil matrix.

Water Resources

The Proposed Action has the potential to impact water resources within and around the TA B-75 ROI. Water resource analysis addresses the potential for impacts to surface waters, wetlands, floodplains, and ground water from sedimentation and/or contamination by testing and training activities and associated expendables.

Biological Resources

Biological resources may be affected by the Proposed Action. Issues to be examined include potential impacts on wildlife and sensitive species and habitats from direct physical impact,

habitat alteration, and noise. Direct physical impact is the physical harm that can occur to an organism (plant or animal) if it comes into contact with an effector, such as a bomb or shrapnel. The main direct physical impact issue for TA B-75 is the potential for gopher tortoises to be hit by a bomb or missile.

Habitat alterations are described as the physical damage or perturbations to terrestrial and aquatic habitats. Habitat alteration can occur as a result of fire started by flares or munitions, or from soil disturbance associated with munitions. The major issue on TA B-75 for this category is the potential loss of gopher tortoise burrows, gopher frog ponds, potential flatwoods salamander ponds, and red-cockaded woodpecker (RCW) trees/foraging habitats from bombs, missiles, or ground testing and training exercises. Gopher tortoise burrows are used by several sensitive species besides the gopher tortoise, including the gopher frog, indigo snake, and Florida pine snake.

Noise produced by surface-to-air (S/A) missiles, munitions testing, and bomb testing may stress some wildlife species or cause hearing loss or damage. Scientific data correlating the effects of noise on humans is well documented; however, information regarding the effects of noise events on wildlife species is limited.

Analysis focuses on identifying sensitive species and habitats within the B-75 ROI, analyzing the potential for impacts, and establishing management actions for the avoidance and/or minimization of identified potential impacts.

Cultural Resources

Potential effects to cultural resources would include disturbance or destruction of sites or artifacts. Physical disturbance and/or the destruction of cultural resources could occur from mission activities. Analysis will focus on cultural site locations and the likelihood of site disturbance and/or destruction.

There are nine potentially eligible sites located within or very near the outer boundaries of the TA B-75 test range. In addition, nine structures are located within TA B-75 (Table 3-8). These structures are individually considered ineligible for the National Register of Historic Places (NRHP). However, due to these structures' association with a significant period and significant events in U.S. history (i.e., the Cold War), they must be evaluated collectively, and any demolition, renovation, or heavy modification of these buildings must be vetted through the 96th Civil Engineer Group/Cultural Resources Branch (96 CEG/CESVH).

Air Quality

Testing and training operations would release emissions from munitions use. Analysis addresses the expected levels of emissions and compares these levels with what is currently permitted from all Eglin AFB sources and county emissions.

Noise

Noise is defined as the unwanted sound produced by mission activity and its associated expendables. Noise may directly inconvenience and/or stress humans and some wildlife species

and may cause hearing loss or damage. Analyses of potential noise impacts include discussions of two noise components: the physical overpressure and the acoustic sound. Noise is produced by bombs, tank guns, and artillery used on TA B-75. The Biological Resources section will analyze the potential for noise impacts to biological receptors, such as RCWs.

Safety/Restricted Access

Safety involves hazards to military personnel and the public resulting from mission activities. Restricted access is typically the result of safety considerations. Restricted access applies to the restriction of public access, described in terms of the availability of Eglin resources (such as test areas, interstitial/recreational areas, or public roads) to the general public. Receptors potentially impacted include military personnel and the public desiring to use these areas. Guidance for restricted access is utilized to coordinate public and military use of airspace, water space (e.g., the Gulf of Mexico), and land areas within the Eglin ROI. Although TA B-75 is closed to all forms of public access, restricted access issues may result due to brief closures of recreational areas that fall within the safety footprint of some missions.

Additionally, unexploded ordnance (UXO) poses a potential impact to safety. Test areas with known UXO require Explosive Ordnance Disposal (EOD) escort, and regulations regarding UXO should remain in place and continue to be followed. Potential UXO issues are identified and associated safety regulations are outlined.

Land Use and Recreation

Land use generally refers to human management and use of land. Specific uses of land typically include residential, commercial, industrial, agricultural, military, and recreational. Land use also includes areas set aside for preservation or protection of natural resources, wildlife habitat, vegetation, or unique features. TA B-75 is solely utilized for military training and testing activities. No change to current land use is expected; however, nearby land use and recreational activities could potentially be impacted by temporary access restrictions during certain testing and training activities.

Socioeconomics

Potential socioeconomic impacts include those that would expose low-income and minority populations to disproportionate negative impacts, or pose special risks to children (under 18 years old) due to noise, pollutant transport, and other conditions in the TA B-75 ROI. The socioeconomic receptors include nearby communities and property that are impacted by the noise from Eglin AFB ordnance. Analysis focuses on the exposure of these communities to anticipated environmental effects and identifying whether potential concern areas were disproportionate to other communities in the region.

1.6 FEDERAL PERMITS, LICENSES, AND ENTITLEMENTS

A Section 7 informal consultation with the U.S. Fish and Wildlife Service (USFWS) regarding impacts to federally listed species is necessary for future TA B-75 testing and training 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 U.S. Air Force is currently conducting Section 7 informal consultation with the USFWS. The Biological Assessment and USFWS concurrence will be included in Appendix G, *Biological Assessment*, of the Final REA.

Some components of this action would take place within or otherwise may affect the jurisdictional concerns of the Florida Department of Environmental Protection (FDEP) and, therefore, will require a consistency determination with respect to Florida's Coastal Zone Management Plan under the Federal Coastal Zone Management Act (CZMA) (Appendix F, *CZMA Consistency Determination*).

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2. ALTERNATIVES

2.1 INTRODUCTION

This section introduces the alternatives that will be evaluated for potential environmental impacts in this REA for TA B-75. The proposed alternatives, which are analyzed in this document, are:

- No Action Alternative: Baseline, as defined by the Preferred Alternative in the 2000 TA B-75 PEA (U.S. Air Force, 2000).
- Alternative 1: Authorize current level of activity plus foreseeable future activities.
- Alternative 2 (Preferred Alternative): Alternative 1 with a 300-percent mission surge.

A brief description of each alternative, including the alternative-specific expendables, is provided in the following section.

2.2 ALTERNATIVES CONSIDERED

The alternatives considered for analysis were determined during an interdisciplinary meeting at Eglin AFB, which included, but was not limited to, representatives from the 46 TW Plans Office (46 TW/XP), the 96th Civil Engineer Group (96 CEG)/Environmental Analysis Section (CEVSP) and Natural Resources Section (96 CEG/CEVSN). The alternatives chosen were a result of discussions on how foreseeable future activities will expand Eglin AFB's testing requirements in the upcoming years. There were no alternatives eliminated from detailed analysis.

2.2.1 No Action Alternative

This alternative is defined as authorizing the level of activity approved in the 2000 TA B-75 PEA (U.S. Air Force, 2000), which authorized a 100-percent increase in **test missions** and associated expendables over the baseline level captured in the Fiscal Years 1995–1997 (FY 1995–1997) Range Utilization Reports (U.S. Air Force, 1996; U.S. Air Force, 1998a; U.S. Air Force, 1998b) and anticipated mission additions. The 100-percent increase applied to test missions only and did not include training missions because during a crisis event, the training units are usually deployed. The 100-percent surge in test missions was included to support a potential increase that might occur in the event of a war or other significant world event that requires U.S. military support. Table 2-1 shows the level of activity under the No Action Alternative, which is the previously approved level of activity. Appendix B provides the level of activity by mission.

Table 2-1. Maximum Annual Expendables for TA B-75 Under the No Action Alternative, Alternative 1 and Alternative 2[a]

Category	Nomenclature	No Action[b]	Alternative 1		Alternative 2[e]
			Current[c]	Future[d]	
Bombs	NOSE PLUG BOMB 750LB M117	0	6	0	24
	BOMB GP 500LB MK82 MOD1	202	116	0	464
	CUP, NOSE SUPPORT MK81, 82, 83, 84	0	6	0	24
	BOMB GP 2000LB MK84 MOD2	8	12	0	48
	BMB PRAC 25LB BDU-33D/B	0	36	0	144
	BOMB, MK-84 INERT	0	24	0	96
	CTG SIGAL MK4 MOD 3	0	36	0	144
	FMU-152A/B FUZE SYSTEM	0	6	0	24
	BOMB, BLU-126	0	6	0	24
	KMU-572	0	4	0	16
	JSOW HNS IV EFI BOOSTER	0	6	0	24
	JSOW FLSC	0	3	0	12
	FLEXIBLE CONFINED DET. CORD	0	12	0	48
	SDB LIVE SLED TEST WARHEAD	0	9	0	36
	SDB REMOTE DEMO UNIT FUZE	0	18	0	72
	SDB WARHEAD	0	8	0	32
	JTV-39	0	16	0	64
	AGM-154A P/N 4211100-1	0	7	0	28
	GBU-31	0	2	0	8
	BOMB GP 1000LB MK83 MOD4	0	20	0	80
	MK-83	20	0	0	0
	MK-106	12	0	0	0
	GBU-12 BDU50 INERT	24	8	0	32
	BDU-33	990	588	0	2,352
	MK-124	0	64	0	256
	GBU-10	8	0	0	0
	FERTILIZER BOMB 2400 LBS, LIVE	0	1	0	4
	GBU-31 (JDAM-2000 LB)	0	3	0	12
	Mark 84	0	1	0	4
	Mark 85	0	1	0	4
	FERTILIZER BOMB 4800 LBS	0	6	0	24
	SDB-DT5	0	1	0	4
	MK-16	2	0	0	
Countermeasures	FLARE SURFACE TRIP M49A1	0	394	0	1,576
	CARTRIDGE, CHAFF, RR170	0	4,635	0	18,540
	FLARE, IR CM, M206	0	17,425	0	69,700
	FLARE,IR CM M211	0	670	0	2,680
	FLARE,COUNTERMEASUR	0	46	0	185
	MJU-50 Flare	0	15	0	60
	CTG IMPULSE BBU-35/B	0	42,251	0	169,004

Table 2-1. Maximum Annual Expendables for Test Area B-75 Under the No Action Alternative, Alternative 1 and Alternative 2[a], Cont'd

Category	Nomenclature	No Action[b]	Alternative 1		Alternative 2[e]
			Current[c]	Future[d]	
Countermeasures, Cont'd	RR-188 CHAFF	0	15,300	0	61,200
	MJU-10 IR FLARE	0	440	0	1,760
	MJU-7 IR FLARE	0	440	0	1,760
	SIGNAL SMK & ILLUM MK6 MOD5 (surrogate)	44	0	0	0
	MJU-46 FLARES	0	220	0	880
	SMOKE, M76	0	250	0	1,000
Explosive Ordnance	CHARGE,DEMOLITION	0	300	0	1,200
	FUSE BLASTING TIME M700 4000 FT	0	11,170	0	44,680
	CHG DEMO MK2 MOD3	84	16	0	64
	IGN TIME BLASTING FUSE M2	0	1,298	0	5,192
	CHG DEMO MK8 MOD2	0	76	0	304
	CUTTER CABLE MK3 MOD1 EXPL LOADED	0	9	0	36
	DEMO KIT BANGALORE TORPEDO M1A2	0	44	0	176
	CHG ASSEMBLY DEMO M183 COMP 4	0	42	0	168
	CORD ASSEMBLY, DETONATING	1,800	59,926	2,000	247,704
	CHG KIT DEMO TUBULAR SWS MK75 MOD0	0	8	0	32
	CAP BLASTING NON ELECT M7	0	882	0	3,528
	PRIMER PERC MK22 MOD1	0	4	0	16
	PRIMER PERC M58	0	4	0	16
	40/85MM (HEAT) GRENADE	0	12	0	48
	CHG DEMO M112 COMP 4 1.25 BS	7,000	7,005	0	28,020
	DETONATOR, RP-83 EBW	0	27	0	108
	RP-87, DETONATOR	0	33	0	132
	HDP BOOSTER	0	42	0	168
	ANFO AMMONIUM NITRATE	0	36,600	0	146,400
	DET CORD	0	870	0	3,480
	AIR BURST SIMULATOR	0	332	0	1,328
	SIMULATED BOOBY TRAP, M118	0	222	0	888
	SIM, EXPLOSIVE BOOBY TRAP	0	476	0	1,904
	CHG DEMO SHAPED MK45 MOD0	0	4	0	16
	CHG DEMO M118	0	56	0	224
	CHARGE, DEMO	0	20	20	160
	CHG DEMO 40LB CRATERING	0	2	0	8
	CAP, BLASTING ELEC M	0	596	0	2,384

Table 2-1. Maximum Annual Expendables for Test Area B-75 Under the No Action Alternative, Alternative 1 and Alternative 2[a], Cont'd

Category	Nomenclature	No Action[b]	Alternative 1		Alternative 2[e]
			Current[c]	Future[d]	
Explosive Ordnance, Cont'd	CHG DEMO SHAPED M2A4 15LB	0	2	0	8
	CHG DEMO SHAPED M3 SERIES 40 LB (surrogate)	0	4	0	16
	CHG ASSY DEMO MK133 MODS 0/1/2 (surrogate)	0	276	0	1,104
	CHG ASSY DEMO MK 135/137/138 (surrogate)	0	27	0	108
	CHG EXPL ORDNANCE DISPOSAL MK86 MOD0	0	2	0	8
	CHG EXPL ORDNANCE DISPOSAL MK87 MOD0	0	2	0	8
	CHG EXPL ORDNANCE DISPOSAL MK88 MOD0	46	2	0	8
	CHG EXPL ORDNANCE DISPOSAL MK89 MOD0	0	2	0	8
	CUTTER, POWDER	0	4	0	16
	ELEC BLAST CAP	0	60	0	240
	CHG FLEX 20 GRAM (PETN) MK140 MOD O (surrogate)	0	27	0	108
	CHG DEMO SHAPED FLEX LINEAR MK144 MOD0	0	20	0	80
	CHG DEMO SHAPED FLEX LINEAR MK149 MOD0	0	20	0	80
	DETONATOR NONELECT MK126 MOD0	0	4	0	16
	DETONATOR NONELECT MK121 MOD0	0	4	0	16
	INITIATOR PYROTECHNIC (surrogate)	0	6	0	24
	WHD MK16 (surrogate)	0	8	0	32
	WARHEAD, MK-101	0	70	0	280
	WHD GM (surrogate)	0	2	0	8
	CLASSIFIED	0	4	0	16
	DETONATOR, RP-83	0	1	0	4
	DIESEL FUEL, 1 GAL	0	480	0	1,920
	WARHEAD, ROCKET, SA13	0	3	0	12
	WARHEAD, ROCKET, SA4	0	4	0	16
High Explosives	GREN RIFLE HE (surrogate)	0	188	0	752
	CHARGE, DEMO 2 LBS HE	0	12	0	48
	C-4, 1 LB HE	0	7	0	28
	C-4, CASE (32 LB HE)	130	0	150	600
	HE, ANFO	0	1	0	4
	HE, AMMONIA NITRATE	0	1	0	4
	HIGH EXPLOSIVE, HMX	0	10	0	40

Table 2-1. Maximum Annual Expendables for Test Area B-75 Under the No Action Alternative, Alternative 1 and Alternative 2[a], Cont'd

Category	Nomenclature	No Action[b]	Alternative 1		Alternative 2[e]
			Current[c]	Future[d]	
High Explosives, Cont'd	CTG 40MM HE M384	80	1,160	0	4,640
	CTG 60MM HE M888	0	128	0	512
	CTG 105MM HE M1 W/O FUZE & SUPPL CHG	0	108	0	432
	CTG 105MM HEP-T M393A2	0	106	0	424
	CTG 81MM HE M374 W/PD FUZE	0	480	0	1,920
	CTG 4.2IN HE M329A2 W/O FUZE	0	48	0	192
	PROJ 155MM HE M107B2	0	142	0	568
	PROJ 5IN/38 CAL HE-MT/PD MK35/47/49	0	16	0	64
	40 MM HEDP	0	20	0	80
	40 MM CTG HE M406 WFZ M551	0	120	0	480
	90 MM HE	0	4,000	0	16,000
	PROJ 8IN HE M106 W/O FUZE	0	84	0	336
	High Explosives	88	0	0	0
	MK-82, AFX-644-3 HE FILL	12	0	0	0
Lasers	LASER GUIDED TRAINING RD	0	4	0	16
	LASER OPS, 1 HR	0	14	0	56
Mines	MINE AT HEAVY M15	0	462	0	1,848
	MINE APERS M18 W/ACCESSORIES	0	608	0	2,432
Missiles	STINGER MSL (FIM-92A)	44	34	40	296
	STINGER MISSILE	0	8	0	32
	STINGER MISSLE LL	0	22	0	88
	Stinger Missile	0	64	0	256
	STINGER RMP SYSTEM MOD 92D	0	24	0	96
	GUIDED MISSILE, SUBSYSTEM	0	12	0	48
	Aim-120C	0	8	0	32
	GUIDED MISSILE, INTE	0	6	0	24
	TOW missiles	0	24	0	96
	AIM-7, Inert	0	4	0	16
	AIM-120, Inert	0	6	0	24
	BGM-71E TOW MSL	0	35	0	140
	JAVELIN ANTI-TANK MISSILE	0	2	0	8
	FIM-43 REDEYE MISSILE	0	8	0	32
	AIM 120	0	10	0	40
Mortars	120MM MORTAR W/FUZE AND CHARGE	0	6	0	24
	82MM MORTAR W/FUZE AND PROPELL	0	6	0	24
	120MM MORTAR W/ FUZE, PROPEL.	0	6	0	24

Table 2-1. Maximum Annual Expendables for Test Area B-75 Under the No Action Alternative, Alternative 1 and Alternative 2[a], Cont'd

Category	Nomenclature	No Action[b]	Alternative 1		Alternative 2[e]
			Current[c]	Future[d]	
Other	PG-7	0	6	0	24
	MICRO-DRONES, 6 FT WING SPAN	0	6	0	24
	MQM-107 RATO BOTTLE	0	1	0	4
Precision Guided Weapons	AGM 154	0	2	0	8
Rockets	MLRS ROCKET POD,RRPR,M28A1	0	174	0	696
	66 MM LAWS ROCKET	60	180	0	720
	RCKT 2.75IN PRAC WHD INERT WTU-18 (surrogate)	0	56	0	224
	2.75"RKT,M255A1 FLECHETTE	0	72	0	288
Small Arms	.50 CAL BALL LINKED M2	0	49,200	0	196,800
	CTG CAL .50 4 API M8/1 API-T M20	11,708	306,781	0	1,227,124
	7.62 MM BALL	225,420	101,211	0	404,844
	CTG 5.56MM BLK M200	32,752	214,434	0	857,736
	CTG CAL .50 BALL M33	0	600	0	2,400
	CTG 7.62MM 4 BALL M59/M80/1 R M62	0	358,788	39,000	1,591,152
	CARTRIDGE, CALIBER.	0	36,000	0	144,000
	CTG 25MM TP-T M793	0	36,000	0	144,000
	CTG 7.62MM NATO BALL M80	0	174,000	0	696,000
	5.56 MM BALL	4,840	762,297	200,025	3,849,288
	CTG 5.56MM BLK M200 LNKD	0	106,200	0	424,800
	25MM	0	38	0	153
	5.56 MM 4-1 TRACER	53,200	477,536	0	1,910,144
	5.56 MM LINKED	0	26,286	89,860	464,584
	CTG CAL .50 SLAP-T M962	0	10,508	0	42,032
	5.56 mm	20,000	248,440	0	993,760
	CTG 60MM TP M50A2	0	120	0	480
	40 MM GRENADE PRACT	1,914	12,705	682	53,548
	CARTRIDGE,40 MILLIM	0	144,968	0	579,872
	CARTRIDGE,105 MILLI	0	16	0	62
	GRN HAND SMOKE WHITE HC AN M8	0	270	0	1,080
	GRENADE, HAND INCENDARY AN M14	0	56	0	224
	GRENADE, HAND SMOKE RED M18	0	330	0	1,320
	GRN HAND SMOKE VIOLET M18	0	408	0	1,632
	12 GAUGE #00 PLASTIC	0	3,500	0	14,000
	5.56 MM TRACER M856	0	14,584	0	58,336
	5.56 MM BALL M193	0	47,112	0	188,448

Table 2-1. Maximum Annual Expendables for Test Area B-75 Under the No Action Alternative, Alternative 1 and Alternative 2[a], Cont'd

Category	Nomenclature	No Action[b]	Alternative 1		Alternative 2[e]
			Current[c]	Future[d]	
Small Arms, Cont'd	5.56 MM M196	9,752	27,982	0	111,928
	CTG 7.62MM BLK M82 LNKD M13	20,340	33,720	0	134,880
	7.62 MM NATO BALL	0	7,000	0	28,000
	7.62 MM LINKED	85,512	22,432	145,220	670,608
	7.62 MM M80 4-1 TRACER	0	13,815	0	55,260
	9 MM BALL	0	1,500	24,000	102,000
	9 MM BALL NATO	39,280	128,046	0	512,184
	CTG CAL .38 SPEC TR (surrogate)	0	1,200	0	4,800
	.45 CAL BALL	0	14,300	0	57,200
	.50 CAL API	118	0	20,000	80,000
	CTG 25MM TP PGU-23/U (surrogate)	0	6,000	0	24,000
	9MM	0	48,886	20,000	275,544
	30 MM TP, PGU-15/B	0	1,448	0	5,792
	30 MM TP	0	1,976	0	7,904
	40 MM RED SMOKE	0	40	0	160
	40 MM GREEN SMOKE	0	74	0	296
	40 MM YELLOW SMOKE	0	88	0	352
	40 MM WHITE STAR, M583	80	22	0	88
	3 INCH PROJECTLE	0	44	0	176
	105 MM TP M2	20	0	0	0
	CTG 120MM HEAT TP-T TANK RD (surrogate)	444	1,898	0	7,592
	CTG 120MM TPCSDS-T TANK RD (surrogate)	1,780	3,558	0	14,232
	120mm TP (HEAT) M830A1	0	340	0	1,360
	GRENADE, HAND FRAG DELAY XM67	0	260	0	1,040
	HAND SMK	0	172	0	688
	SIMULATED RIOT GAS	0	230	0	920
	35 MM M190 PRACTICE	276	0	0	0
	DISTRESS FLARES	0	40	0	160
	GRND WHITE	0	148	0	592
	ARTY BURST	0	610	0	2,440
	GREN HAND SIMULATOR (surrogate)	0	1,618	0	6,472
	120 MM HEAT TP-T TANK RD	0	560	0	2,240
	120 MM SABOT	0	700	0	2,800
	155 MM TP	16	0	0	0
	.50 CAL	4,000	1,438	37,500	155,752
	M8 SMOKE GRENADE (white)	0	6	0	24
	208 MM TP	24	0	0	0
	.50 CAL BALL	4,000	10,615	0	42,460

Table 2-1. Maximum Annual Expendables for Test Area B-75 Under the No Action Alternative, Alternative 1 and Alternative 2[a], Cont'd

Category	Nomenclature	No Action[b]	Alternative 1		Alternative 2[e]
			Current[c]	Future[d]	
Small Arms, Cont'd	30-mm TP-T	0	2,357	0	9,428
	L8A3 GRENADES	0	250	0	1,000
	40-mm TP GRENADE	0	96	78	696
	84-mm RECOIL SUB RD	192	0	0	0
	84-mm RECOILLESS TP	168	0	0	0
	SMOKE GRENADES, M18	0	120	0	480
	.50-Cal 4/1 Ball/Tracer Mix	0	3,000	1,000	16,000
	105-mm TP M-724A1	0	100	0	400
	.45-cal	0	0	24,000	96,000
	25-mm TP	0	0	57,489	229,956
	40-mm linked	0	0	2,400	9,600
	40-mm MK-19 non-dud producing practice grenade	0	0	1,000	4,000
	40-mm single	0	0	1,200	4,800
	5.56-mm Blanks	0	0	20,000	80,000
	5.56-mm Tracer	0	0	15,000	60,000
	7.62-mm Blanks	0	0	10,000	40,000
Unknown	UNK	0	6	0	24
	M2A3	52	0	0	0
Warhead	FRENCH FCT WHD	4	0	0	0
	I-800 HARDENED TGT WHD	4	0	0	0

a. Expenditure quantities by mission are provided in Appendix B.
b. Source: U.S. Air Force, 2000
c. Maximum annual quantity from FY 1998–2008; expendables grouped by similar nomenclature, DODIC, and/or NSN.
d. Source: Walker, 2009; U.S. Air Force, 2008
e. Alternative 1 plus 300 percent.

2.2.2 Alternative 1: Authorize Current Level of Activity Plus Foreseeable Future Activities

Alternative 1 would authorize the current level of activity plus foreseeable future activities. The current level of activity is defined as the maximum annual expenditure for each type of expendable from FY 1998 through FY 2008; this approach accounts for periods of low or no activity of a certain mission. Future TA B-75 expenditures will include increased munitions expenditures associated with ground training activities from several new user groups including the 23rd Special Tactics Squadron, the 1st Special Operations Support Squadron (1 SOSS), the 96th Ground Combat Training Squadron (96 GCTS), and the Joint Strike Fighter (JSF) (Walker, 2009; U.S. Air Force, 2008). The use of high explosives (HE) for testing or training on TA B-75 would be considered on a case-by-case basis and must be approved by the 46 TW in advance of mission activities. This alternative would be implemented using management actions identified in Chapter 4 and summarized in Section 2.5, Management Requirements. Table 2-1 shows the estimated level of activity under Alternative 1.

2.2.3 Alternative 2: Alternative 1 With a 300-Percent Mission Surge (Preferred Alternative)

This alternative is defined as authorizing the level of activity as described under Alternative 1, plus a 300-percent increase in mission activity (testing and training), including management actions identified in Chapter 4 and summarized in Section 2.5, Management Requirements. Similar to Alternative 1, any use of HE for testing or training on TA B-75 would be considered on a case-by-case basis and must be approved by the 46 TW in advance of mission activities. A 300-percent increase was chosen as a likely maximum surge increase in military testing and training during a national defense contingency. Table 2-1 shows the estimated level of activity under Alternative 2.

This alternative includes authorization of the proposed level of activity and performance of a comprehensive environmental analysis to ensure that TA B-75 can support this level of activity without suffering significant environmental impact. This is the Preferred Alternative because it includes all mission activities that are expected to occur and provides capacity for a test surge. This alternative authorizes an expected maximum level of activity, which allows better responsiveness to the customer while ensuring that cumulative environmental effects do not cause significant impact.

2.3 COMPARISON OF ALTERNATIVES

Potential impacts under each alternative are summarized below in Table 2-2.

Table 2-2. Summary of Potential Impacts Under All Alternatives

Resource	No Action	Alternative 1	Alternative 2
Chemical Materials	Munition fragments and residues would be generated as a result of testing and training missions. Releases to the environment from munitions utilized in proficiency and qualification training require reporting to the U.S. Environmental Protection Agency (USEPA) under the Emergency Planning and Community Right-to-Know Act (EPCRA) Toxic Release Inventory (TRI) program. Eglin AFB has developed procedures to comply with TRI reporting requirements and would track ordnance use associated with the proposed alternatives. Although the release of some chemicals would increase from the previously assessed baseline under the No Action Alternative, no new TRI thresholds would be exceeded and adverse effects are not anticipated.	Under Alternative 1, the release of toxic chemicals would increase over the No Action Alternative. However, no new TRI thresholds would be exceeded and adverse impacts to the environment are not anticipated.	Under Alternative 2, ordnance expenditures would increase threefold, and therefore the release of hazardous chemicals would increase. Despite this, no new TRI thresholds would be exceeded and adverse impacts to the environment are not anticipated.

Table 2-2. Summary of Potential Impacts Under All Alternatives, Cont'd

Resource	No Action	Alternative 1	Alternative 2
Soils	There would be no significant impacts to soils under the No Action Alternative. Metal concentrations in the soil would be below Eglin background and USEPA risk-based concentrations. Munitions training and foot and vehicle traffic could cause soil erosion, particularly on sparsely vegetated slopes. However, adherence to management practices would decrease erosion potential.	There would be no significant impacts to soils under Alternative 1. Increased munition expenditures would not result in metal concentrations in the soil exceeding USEPA risk-based concentrations. Munition training and foot and vehicle traffic could cause soil erosion, particularly on sparsely vegetated slopes. However, adherence to management practices would decrease erosion potential.	There would be no significant impacts to soils under Alternative 2. Increased munition expenditures would not result in metal concentrations in the soil exceeding USEPA risk-based concentrations. Increased munition training and foot and vehicle traffic could cause soil erosion, particularly on sparsely vegetated slopes. However, adherence to management practices would decrease erosion potential.
Water Resources	There would be no significant impacts to water resources under the No Action Alternative. Groundwater metal concentrations would not exceed USEPA risk-based thresholds. Surface water resources are located at distances from targets sufficient to minimize potential for contaminant transport, and sedimentation due to erosion would be controlled by management requirements. Wetlands would not be impacted, and no actions would modify the floodplain.	There would be no significant impacts to water resources under Alternative 1. Increased munition expenditures would not result in metal concentrations in groundwater exceeding USEPA risk-based concentrations. Surface water resources are located at distances from targets sufficient to minimize potential for contaminant transport, and sedimentation due to erosion would be controlled by management requirements. Wetlands would not be impacted, and no actions would modify the floodplain.	There would be no significant impacts to water resources under Alternative 2. Increased munition expenditures would not result in metal concentrations in groundwater exceeding USEPA risk-based concentrations. Surface water resources are located at distances from targets sufficient to minimize potential for contaminant transport, and sedimentation due to erosion would be controlled by management requirements. Wetlands would not be impacted, and no actions would modify the floodplain.

Table 2-2. Summary of Potential Impacts Under All Alternatives, Cont'd

Resource	No Action	Alternative 1	Alternative 2
Biological Resources	Potential impacts under the No Action Alternative are identical to those associated with the Preferred Alternative of the 2000 TA B-75 PEA. No significant impacts to biological resources are expected. Noise impacts to RCWs would not be significant. RCWs have demonstrated a degree of adaptability to the noise occurring on TA B-75. The most probable behavioral responses of RCWs in close proximity to TA B-75 would be a startle reflex and temporary nest flushing. Activities are not expected to adversely impact nesting success. No significant impacts are anticipated to other wildlife species. The probability of gopher tortoise burrow collapse due to munition impact is considered low. Similarly, the likelihood of direct physical strike of sensitive wildlife species such as the gopher tortoise, eastern indigo snake, and gopher frog is considered remote. Release of chemical materials into the soils or air at TA B-75 was found to have no significant impacts to sensitive wildlife species such as the RCW, American kestrel, eastern indigo snake, and gopher tortoise.	No significant impacts are expected under Alternative 1 or Alternative 2. Four active RCW trees and 487 acres of foraging habitat exist on the eastern portion of TA B-75. Foraging RCWs may avoid areas where disturbance is occurring. Pioneering RCWs may be affected by noise from daily operations and not colonize or immigrate to new areas near the test site or access roads. This could affect the growth of the RCW population adjacent to the proposed activity area. Before any tree clearing, units must coordinate with Eglin Natural Resources. Vehicle strikes are the primary concern for bears on Eglin, thus drivers should be alert to the presence of bears to avoid impacts. The Florida black bear is unlikely to be adversely impacted by activities under this alternative. Two gopher tortoise burrows exist in the eastern end of the test area near Eglin Road 213, and there is the potential for gopher tortoises anywhere on the test area. Training and heavy munitions use should be avoided near any gopher tortoise burrows and if a gopher tortoise is sighted, activities should cease until the tortoise moves out of harm's way. Transportation and release of tortoises would follow guidelines established by the Florida Fish and Wildlife Conservation Commission (FWC). One confirmed gopher frog pond exists in the eastern end of the test area near Eglin Road 213 and another is present just outside the eastern boundary. Restriction of ground-disturbing activities within 100 feet of the gopher frog ponds would avoid impacts. It is unknown if the federally listed Eastern indigo snake is present on TA B-75. The primary potential impact would be crushing by vehicles during daily operations. Practices that would reduce impacts include ceasing activities if an eastern indigo snake is sighted and allowing the snake to move away from the site before resuming activities, and avoiding disturbance to gopher tortoise burrows. Flatwoods salamander potential habitat exists in the eastern end of the test area. A 1,500-foot buffer has been established around potential habitat to protect pond-breeding flatwoods salamanders. Within this buffer, all vehicle traffic should remain on existing roads and no ground-disturbing activities should occur.	
Cultural	No adverse effects to cultural resources would be expected under any of the alternatives.		

Table 2-2. Summary of Potential Impacts Under All Alternatives, Cont'd

Resource	No Action	Alternative 1	Alternative 2
Air Quality	No adverse impacts to air quality are anticipated.	The use of munitions would cause no adverse impacts to air quality.	The increased munitions use would not cause adverse impacts to air quality.
Noise	No adverse impacts associated with noise would occur.	Noise from munitions would cause elevated noise levels around the test area but is not expected to attenuate beyond the Eglin AFB boundaries at levels that would cause harm to potential receptors. No adverse impacts are expected from noise.	The increase in munition expenditure would cause increased occurrences of noise but would not increase the level of noise, and the noise would not exceed levels that would harm receptors off base. No adverse impacts from noise are expected.
Safety	Since the types of munitions to be used are the same or similar to the types currently used at TA B-75, implementation of the No Action Alternative, Alternative 1, or Alternative 2 would not be expected to prevent or significantly limit the ability of range managers to conduct EOD and range maintenance activities. Safety footprints or surface danger zones (SDZs) would be employed for land based training where live ordnance is used. In the case of the proposed live-fire ranges, personnel exclusion zones and appropriate safety buffers would be developed and implemented. Public access to TA B-75 is permanently restricted, so no safety risks to the public are expected. Regardless of increased munitions use, established safety procedures and policies would continue to ensure safety of Eglin personnel. Most areas on the Eglin Range, including TA B-75, have the potential for UXO contamination. Consultation and coordination with 96th Civil Engineering Squadron (96 CES/CED) would mitigate any potential adverse impacts to Eglin AFB personnel from UXO. Although increases in the frequency of ordnance use would likely lead to increased instances of UXO, the current safety policies and procedures would continue to insure that there would be no adverse impacts from UXO.		
Land Use	There would be no changes to land use designation, so there would be no impacts to land use. Under the No Action Alternative, there is potential for minor and temporary impacts to recreational resources from the possible closures of recreational areas during certain testing and training missions.	There would be no changes to land use designation, so there would be no impacts to land use. Under Alternative 1, there is an increase in the potential for closures to recreational areas. However, closures would occur only for the duration of the activity and other areas would remain open for recreational areas. Therefore, impacts to recreational resources are anticipated to be minor and temporary.	There would be no changes to land use designation, so there would be no impacts to land use. Under Alternative 2, there is an increase in the potential for closures to recreational areas. However, closures would occur only for the duration of the activity and other areas would remain open for recreational areas. Therefore, impacts to recreational resources are anticipated to be minor and temporary.

Table 2-2. Summary of Potential Impacts Under All Alternatives, Cont'd

Resource	No Action	Alternative 1	Alternative 2
Socioeconomics	No significant impacts to the public were anticipated from the level of activity approved in the 2000 TA B-75 PEA; therefore, no significant impacts are anticipated under the No Action Alternative.	Under Alternative 1, there is a potential for more frequent noise impacts; however, impacts are anticipated to be minor and temporary lasting only for the duration of the activity. In addition, no special risks to children or disproportionate noise impacts have been identified to areas of environmental justice concerns from activities performed under Alternative 1 at TA B-75. Therefore, only minor and temporary noise impacts from munitions expenditures are anticipated to socioeconomic resources under Alternative 1.	Under Alternative 2, there is a potential for more frequent noise impacts; however impacts are anticipated to be minor and temporary lasting only for the duration of the activity. In addition, no special risks to children or disproportionate noise impacts have been identified to areas of environmental justice concerns from activities performed under Alternative 2 at TA B-75. Therefore, only minor and temporary noise impacts from munitions expenditures are anticipated to socioeconomic resources under Alternative 2.

2.4 PREFERRED ALTERNATIVE

The Preferred Alternative is Alternative 2, which allows a 300-percent increase in TA B-75 operations over the current level of activity plus foreseeable future activities. Implementation of management actions will allow a surge in test and training activities while minimizing impacts to environmental and natural resources. The No Action Alternative and Alternative 1 are not expected to be sufficient to account for the expected growth of testing and training activities at Eglin AFB over the next 10 years. Therefore, Alternative 2 was selected as the Preferred Alternative to adequately cover the environmental analysis needed to support potential increased testing and training requirements as they occur.

The need for additional management actions is driven by legislation, regulations, and policies that protect sensitive habitats, cultural resources, and threatened and endangered species (Appendix A). Legislation pertaining to sensitive habitats, sensitive species, and exotic species includes the Endangered Species Act; AFI 32-7064, *Integrated Natural Resources Management Plan*; Executive Order (EO) 11990, *Protection of Wetlands*; and EO 13112, *Invasive Species*. Regulations on treatment of threatened and endangered species, many of which are supported in sensitive habitats, will be further described in the Biological Resources section. Several laws and regulations are pertinent to the treatment of cultural resources, such as the National Historic Preservation Act of 1966 (NHPA), as amended; the Archaeological Resources Protection Act of 1979; and AFI 32-7065, *Cultural Resources Management*, which specifies proper procedures for cultural resource management at Eglin AFB.

2.5 MANAGEMENT REQUIREMENTS

The REA was prepared with consideration that the following management requirements will be employed for all TA B-75 missions. The proponents are responsible for ensuring these management activities are adhered to.

General

- Relocate individual test sites frequently to reduce the impact potential at any one location.
- A monitoring plan should be developed to include, but not be limited to, chemical analysis of soils, groundwater monitoring, surface water monitoring, and endangered species surveys.
- Fill all trenches immediately after use.
- Assault zones must be surveyed and designated as safe to use (AFI 13-217).
- Release flares at altitudes that will ensure complete burnout prior to reaching the surface.
- Prior to testing or training missions, units must obtain the daily fire danger rating by visiting the Eglin Environmental Management homepage available on the Internet at http://em.eglin.af.mil/ems/emsn/emsnp, which is also available through the Central Scheduling Enterprise (CSE) when scheduling a mission. Adherence to these pyrotechnics restrictions is mandatory. Allow no deployment of flares when the fire index presents an unacceptable hazard.
- Report all wildfires immediately to the Eglin Natural Resource Section.
- During ground training, avoid ground disturbing activities within 100 feet of streams.

Noise

- Monitor weather conditions and coordinate with the Eglin Weather Office to determine when meteorological conditions would cause increased noise impacts. Consider postponing impactive activities when feasible.
- For general disturbance from noise and human presence, follow guidelines presented in the Management Guidelines for the RCW on Army Installations (U.S. Army, 2006).

Physical Resources (Water and Soils)

- Maintain a minimum 100-foot vegetated buffer between surface waters and bare soil testing areas.
- Do not establish any new cleared target areas within 200 feet of any natural water body.
- Adhere to *Eglin's Wildfire Specific Action Guide Restrictions* for pyrotechnics use.
- Detonations of explosives should not occur within 200 feet of water bodies.
- Immediately remove any ordnance that lands in streams bank areas and interior objectives, in accordance with Air Force regulations.

- Conduct target and ordnance debris removal and disposal of solid debris from blanks, chaff, smokes, and flares, in accordance with Air Force regulations.
- Employ bullet containment, lead projectiles management, and lead reclamation to reduce lead concentrations.
- Vehicles should remain on roads or established tracks and corridors.
- Conduct groundwater quality sampling as necessary near any open detonation pit.
- Minimize target vehicle placement on sloped areas, and restrict track vehicles operation in areas with a slope greater than 5 percent to help reduce erosion.
- Establish low-growing grassland communities on severely disturbed areas susceptible to erosion, reduce the frequency of vegetation management practices, and incorporate erosion control practices as needed on adjacent areas.
- Design concave slope segments on newly constructed targets and establish and/or maintain vegetative buffers on existing target sites.
- Relocate targets to areas on the test area less prone to erosion impacts and surface water contamination.
- Reduce slope gradients and avoid existing or potential unstable slopes.
- Restrict off-road vehicle trafficking, digging, and other ground-disturbing activities within 100 feet of the wetland in the southeastern portion of the test area.
- Dig holes no deeper than 3 feet, and no holes will be dug within 150 meters (about 492 feet) of any stream.
- Lime soils to obtain a potential of hydrogen (pH) between 6.5 and 7, and add compost or clay materials to minimize the mobility and availability of metals in the soil.
- Design vegetation control practices that minimize surface disturbance and create implementation strategies for increasing vegetative cover.
- Locate and design missions to avoid existing or potential unstable slopes, and to avoid reducing vegetative cover.
- Revegetate unstable slopes when feasible; maintain grassland buffers around target sites.

Biological Resources

- Do not conduct activities within research plots or restoration sites unless the 96 CEG/CEVSN has given written authorization.
- Coordinate explosives use in the vicinity of research or restoration areas with 96 CEG/CEVSN management.
- Ensure that all military activities are in compliance with the current regulations in the Eglin Outdoor Recreation, Hunting, and Fresh Water Fishing Map and Regulations (updated annually), unless the 96 CEG/CEVSN and FWC grant specific authorization. Tree cutting is limited to sand pine and scrub oak. Do not cut down longleaf pine for any reason.

- Coordinate all military activities that are within or near stands of mature longleaf pine and scheduled during RCW nesting season (late April–July) with the 96 CEG/CEVSN.
- Adhere to the Eglin Wildland Fire Specific Action Guidelines regarding fire danger ratings.
- Do not drive nails or other objects into trees for any reason, unless there is special authorization to do so.
- Provide units 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. Personnel should stop activities if an eastern indigo snake is sighted and allow the snake to move away from the site before resuming activities.
- Prior to land clearing or establishment of a new target area, contact Eglin Natural Resources for a gopher tortoise/indigo snake survey.
- Avoid gopher tortoise burrows by 25 feet.
- For any gopher tortoise burrows that are in imminent danger from munitions testing or training, contact Eglin Natural Resources for site evaluation and possible species relocation. Eglin would follow the *Gopher Tortoise Permitting Guidelines* (FWC, 2008) for relocation of gopher tortoises and commensals (i.e., indigo snake, pine snake, and gopher frog).
- Follow the Management Guidelines for the RCW on Army Installations, which details activities that are allowed and those that are restricted within a 200-foot buffer of active RCW trees (U.S. Army, 2006). Only transient foot traffic and vehicular traffic on established roads/trails are allowed with the 200-foot buffer.
- Personnel should stop activities if a black bear or gopher tortoise is sighted and allow the animal to move away from the site before resuming activities.
- Do not conduct any ground-disturbing activities or off-road driving within 100 feet of the gopher frog pond in the eastern portion of B-75.
- Within the 1,500-foot buffer around potential flatwoods salamander habitat, all vehicle traffic should remain on existing roads and no ground-disturbing activities should occur. Any future proposed action potentially impacting this buffer zone must be reviewed by 96 CEG/CEVSN, Eglin Natural Resources Section. Consultation with federal and state agencies may be required.
- Avoid areas of known or potential wildlife habitat (particularly in the eastern portion of the range), or contact 96 CEG/CEVSN, Eglin Natural Resources Section, to conduct surveys before activities, when feasible.

Solid Waste/Hazardous Materials

- Small arms blank cartridges must be picked up and turned in to be recycled (described in individual test directives).
- Collect all residue from field kitchens and transport to Eglin for proper disposal.
- Dispose of wastewater from field showers in accordance with Air Force regulations.

Cultural Resources

- Leave any archaeological artifacts discovered in place and immediately report the location to the 96 CEG/CESVH (Cultural Resources Branch). If archaeological materials are discovered during construction or demolition activities, all actions in the immediate vicinity must cease and efforts taken to protect the find from further impact. Contact 96 CEG/CESVH immediately if a discovery occurs.
- Coordinate with the 96 CEG/CESVH prior to any ground-disturbing activities beyond that already approved mission activities.
- Vehicle movements should be restricted near water bodies, on steep slopes, in areas where the soil is exceptionally soft or devoid of vegetation, and in areas where artifacts are located on the surface of the ground.
- The 96 CEG/CEVSH will be notified as early as possible in the planning process if modifications or demolitions to standing structures are to occur.

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3. AFFECTED ENVIRONMENT

The affected environment section of this report describes the receptors within TA B-75 that are potentially impacted by testing and training operations. This chapter is organized by the following resource sections: Chemical Materials, Soils, Water Resources, Biological Resources, Cultural Resources, Air Quality, Noise, Safety, Land Use, and Socioeconomics Resources.

3.1 CHEMICAL MATERIALS

Chemical materials encompass liquid, solid, or gaseous substances that are released to the environment as a result of mission activities. These materials would include munitions and pyrotechnic combustion by-products from items such as smokes and flares. Release of these materials may potentially affect air quality, water quality, soils, and sediments. The environmental analysis of chemical materials describes the potentially adverse environmental impacts from testing and training activities within TA B-75.

3.1.1 Hazardous Materials

According to the Resource Conservation and Recovery Act (RCRA), Section 6903(5), hazardous materials (HM) and waste are defined as substances that, because of "quantity, concentration, or physical, chemical, or infectious characteristics may cause or significantly contribute to increases in mortality or serious illnesses, or pose a substantial threat to human health or the environment."

HM as referenced here pertain to mission-related hazardous chemicals or substances meeting the requirements found in 40 CFR 261.21.24, are regulated under RCRA, and are guided by AFI 32-7042. The HM to be transported, stored, and used on site for the Proposed Action consist of fuels, munitions, and pyrotechnics.

Eglin AFB has implemented a *Hazardous Waste Management Plan*, AAC Instruction 32-7003, that identifies hazardous waste (HW) generation areas and addresses the proper packaging, labeling, storage, and handling of HWs. The plan also addresses record keeping; spill contingency and response requirements; and education and training of appropriate personnel in the hazards, safe handling, and transportation of these materials (U.S. Air Force, 2006a).

Specific procedures and responsibilities for responding to a HW spill or other incident are also described in the Eglin AFB *Spill Prevention, Control, and Countermeasures (SPCC) Plan* (U.S. Air Force, 2005).

Releases to the environment from munitions utilized in proficiency and qualification training require reporting to the USEPA under the EPCRA TRI program. Training is subject to a TRI reporting threshold of 10,000 pounds (lbs) per year for most common chemicals, with lower reporting thresholds for chemicals classified as persistent bioaccumulative toxic. These chemicals include mercury, with a reporting threshold of 10 lbs, and lead, with a threshold of 100 lbs. In cases when a threshold is exceeded, the installation must report on a "Form R" report

to the USEPA the quantity of munition-related waste released to the environment or recovered and recycled.

Eglin AFB has procedures to comply with TRI reporting requirements and would track ordnance use associated with the proposed alternatives. This could require new procedures if proposed training activities would result in reporting thresholds being exceeded at the base for any new chemicals.

Regulations

Under federal law, the transportation of HM is regulated in accordance with the Hazardous Materials Transportation Act, 49 U.S. Code (USC) 1801 et seq. For the transportation of HM, Florida has adopted federal regulations that implement the Hazardous Materials Transportation Act, found at 49 CFR 178.

State laws pertaining to HM management include the Florida Right-to-Know Act, Florida Statutes Title 17, Chapter 252, and annotated Title 29, Section 403.721, which authorizes the Hazardous Waste Section of the FDEP and the Florida Department of Transportation Motor Carrier Compliance Department to implement 49 CFR 178 .

AFI 32-7086 Supplement 1, *Hazardous Materials Management*, describes how Eglin complies with federal, state, Air Force, and DoD laws and instructions. All Eglin AFB organizations and tenants are required to follow this plan.

3.1.2 Debris

Debris includes the physical materials that are deposited on the surface of terrestrial or aquatic environments during mission activities. The potential impacts are primarily related to physical disturbances to people, wildlife, or other users of the Range, and chemical alterations that could result from the residual materials. Examples of debris deposited from activities in TA B-75 that may potentially result in environmental impacts include the following:

- Shell casings, canisters from signal smokes, flares, and chutes from flares
- UXO (primarily inert items)
- Litter and refuse from daily mission activities, including ground troop movement

3.2 SOILS

This section provides descriptions of the soils found within TA B-75. The test area is primarily composed of the Lakeland Sand soil series, but contains four additional types as well. Information on erosion potential is also presented. Appendix A, *Relevant Laws, Regulations, and Policies*, provides pertinent regulations.

3.2.1 Soil Types

The relief on TA B-75 is characterized as gently rolling hills with broad to narrow ridges, relatively flat to gently undulating terraces, and broad to narrow basins. The test area is a 3,557-acre tract with over 5 square miles of continuous test area lands. Elevations range from 75 to 185 feet. Areas of shorter, steeper slopes (8 to 20 percent) occur within the northern and southern quadrants west of Range Road 743 and along riparian zones that overlap the northern and southern boundaries of the test area. These slopes are prone to becoming unstable and may experience moderate to severe erosion.

The Lakeland Sand soil series is the primary soil type at TA B-75. Additional soil types include the Chipley and Hurricane soil series, Foxworth Sand, Rutlege Sand, and Troup Loamy Sand (Table 3-1; Figure 3-1) (U.S. Department of Agriculture [USDA], 1995; U.S. Air Force, 2009). Soil descriptions are included in Appendix D, *Soils*.

Table 3-1. TA B-75 Soil Types and Characteristics

Soil Name	Erosion Risk	Attributes	Soil Type	Acreage within TA B-75
Lakeland Sand	Moderate to high	Yellowish brown to grayish brown	Sandy	3,491
Chipley and Hurricane	High	Marine sediments, yellow, brown, or gray	Sandy	24
Foxworth Sand	Moderate	Marine or eolian sediments, very dark brown	Sandy	35
Rutledge Sand	Low	Ponding, very acidic, clayey	Loamy sand	4
Troup Loamy Sand	Low to moderate	Marine unconsolidated sediments, brown	Loamy sand	$\leq$ 3

3.2.2 Erosion

Erosion caused by human activities may occur at rates greater than that caused by natural conditions and may have detrimental effects on soils and ecosystems. The susceptibility of soil to erosion is primarily dependent on factors such as soil texture, moisture content, pH, and ionic strength of the eroding water. The probability of erosion generally declines with increases in the amount of clay and organic matter content. In contrast, uniform silts and sands tend to have a higher erosion probability. Slope angle and length are the primary topographic variables influencing rainfall erosion. Vegetation plays a role in the interception and diffusion of water energy from rain splash and overland water flows.

Key properties of Lakeland soils, which are the predominant soils on TA B-75, include quartz sand texture, excessive drainage, high permeability rates, low organic matter and clay content, poor soil structure (low cohesion, adhesion, and aggregate stability), and absence of active soil-forming processes. These characteristics suggest at least a moderate potential for soil erosion at the test area. Sloping topography that exists throughout TA B-75 contributes to susceptibility to sheet soil erosion and channelization. Slopes generally occur on upland areas as well as along waterways and wetlands, and erosion is fairly prevalent in some areas. Slopes on the test area have become steeper and shorter as a consequence of long-term soil losses. Severe erosion is occurring on the side slopes of some Lakeland soils, main interior roads, and watershed areas that outfall into adjacent streams.

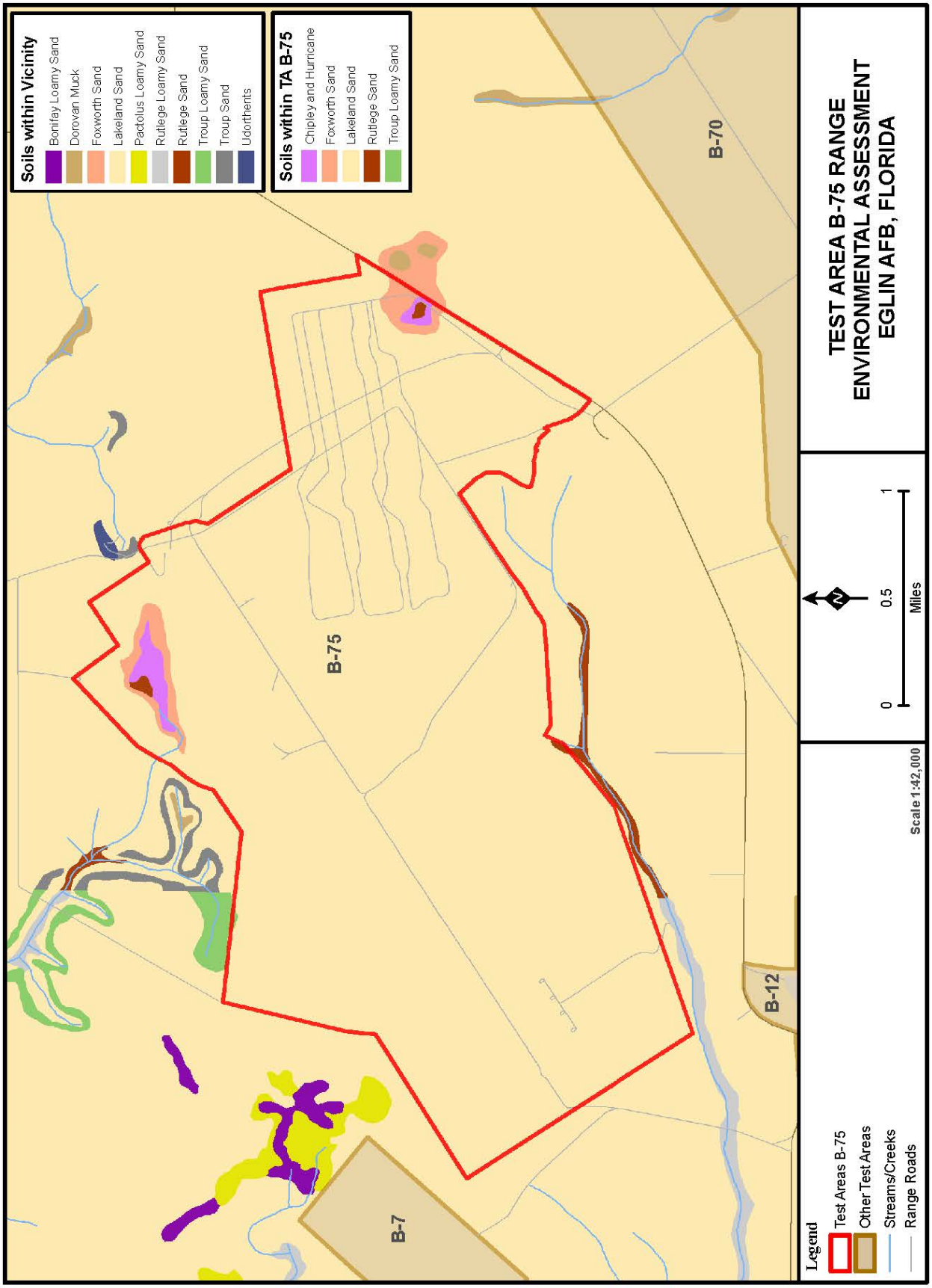

Figure 3-1. Soil Types Within TA B-75

3.3 WATER RESOURCES

This section provides descriptions of the qualitative and quantitative characteristics of water resources on TA B-75. Water resources include groundwater, surface water, wetlands, floodplains, and the coastal zone. Site-specific information on the water resources associated with TA B-75 is contained in the following paragraphs. Appendix A, *Relevant Laws, Regulations, and Policies*, provides pertinent regulations.

3.3.1 Groundwater

Two major aquifers underlie Eglin AFB: the Surficial Aquifer, also known as the Sand and Gravel Aquifer, and the Floridan Aquifer. The Surficial Aquifer is a generally unconfined (water table), near-surface unit separated from the underlying confined (under pressure) Floridan Aquifer by the low-permeability Pensacola Clay confining bed. The Surficial Aquifer is mainly composed of clean, fine-to-coarse sand and gravel, while the Floridan Aquifer consists of a thick sequence of interbedded limestone and dolomite. Water quality of the Surficial Aquifer is generally good, but is vulnerable to contamination from surface pollutants due to its proximity to the ground surface (U.S. Air Force, 2003a).

Water from the Surficial Aquifer is not a primary source of domestic or public water supply on Eglin because of the large quantities of higher quality water available from the underlying upper limestone of the Floridan Aquifer (U.S. Air Force, 2003a). Water drawn from the upper limestone of the Floridan Aquifer is of suitable quality for most uses and is the primary source of water used at Eglin AFB. The top of the aquifer is about 50 feet below mean sea level (MSL) in the northeast corner of the base and increases to about 700 feet below MSL in the southwestern area of the base (McKinnon and Pratt, 1998).

The Surficial Aquifer system is in direct contact with surface waters on Eglin. Discharge of groundwater constitutes the base flow for most streams and rivers, such as Holley Creek just south of TA B-75. The position of the Surficial Aquifer near the surface and its relatively high percolation rates make the aquifer vulnerable to contamination by surface pollutants. Lateral migration of contaminants towards surface water discharge points potentially facilitates the transfer of groundwater pollutants to area streams, rivers, and wetlands.

3.3.2 Surface Water

Surface waters are any waters that lie above groundwater, such as streams, springs, ponds, lakes, rivers, bayous, and bays. There are no perennial (annual flow) streams located within the boundaries of TA B-75; however, an intermittent (seasonal flow) stream associated with Wolf Creek (a steephead seepage stream) is located within the TA B-75 boundary. In addition, a portion of the Holley Creek riparian zone lies within TA B-75. Bear, Holley, Big Hallow, Wolf, and Milligan Creeks occur within 1 kilometer (km) (0.62 mile) of the test area (Figure 3-2). The test area watershed generally drains into the Wolf Creek floodplains to the north and Holley Creek to the south.

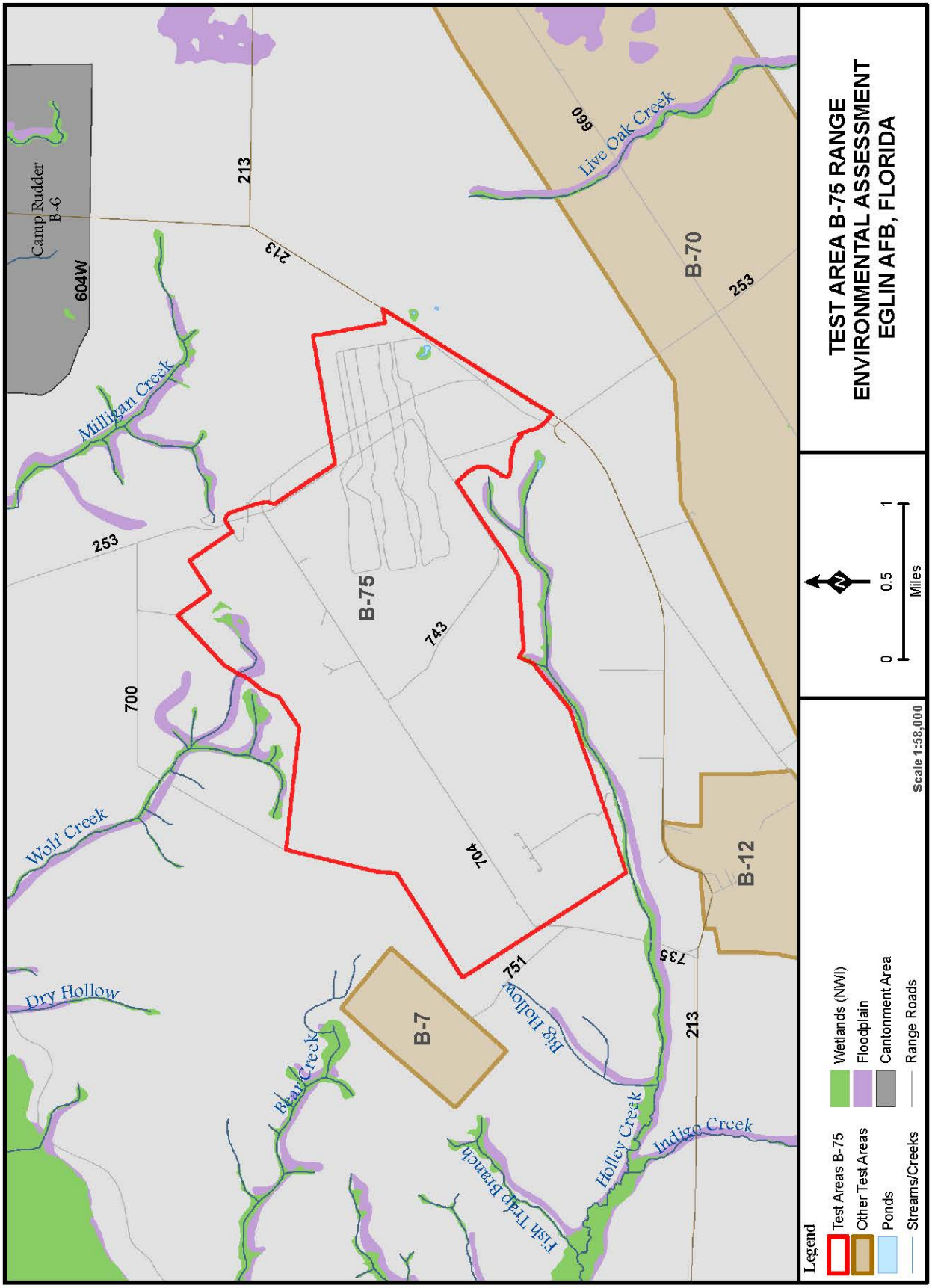

Figure 3-2. Water Resources Located on TA B-75

The State of Florida has developed and retains jurisdiction for surface water quality standards for all waters of the state in accordance with the provisions of the Clean Water Act (CWA). Section 303 of the CWA requires the state to establish water quality standards for waterways, identify those that fail to meet the standards, and take action to clean up these waterways. Florida recently adopted the Impaired Waters Rule (IWR) (Florida Administrative Code [FAC] Chapter 62-303), with amendments, as the new methodology for assessing the state's waters for 303(d) listing. The FDEP submits names of surface waters that are determined to be impaired, using the methodology in the IWR and adopted by secretarial order, to the USEPA for approval as Florida's 303(d) list. The FDEP submits updates to Florida's 303(d) *List of Impaired Surface Waters* to the USEPA every two years. The *2006 Integrated Water Quality Assessment for Florida: 2006 305(b) Report* and *303(d) List Update* (FDEP, 2006a) satisfy the listing and reporting requirements of Sections 303(d) and 305(b) of the CWA.

Surface waters on Eglin AFB are Class III waters, meaning that they are designated for "recreation, propagation, and maintenance of a healthy, well-balanced population of fish and wildlife" (FDEP, 2006a). Impaired waters on or adjacent to Eglin AFB include: Boggy Bayou, Poquito Bayou, Rocky Bayou State Park, Choctawhatchee Bay, East Bay, and Yellow River (FDEP, 2006b; FDEP, 2007). The land areas of TA B-75 that drain into basins constitute a small fraction of the total land area that drains into the receiving waters. Industry, agriculture, and waste processing in these areas are major contributors of water run-off and effluent components to the receiving water bodies. There is no clear association between the status of the basins and activities occurring on TA B-75.

3.3.3 Wetlands

Wetlands are areas of transition between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water (USFWS, 1979). Abiotic and biotic environmental factors such as morphology, hydrology, water chemistry, soil characteristics, and vegetation contribute to the diversity of wetland community types. The term *wetlands* describe marshes, swamps, bogs, and similar areas. Local hydrology and soil saturation largely affects soil formation and development, as well as the plant and animal communities found in wetland areas (USEPA, 1995). Wetlands are often categorized by water patterns (the frequency or duration of flooding) and location in relation to upland areas and water bodies. Wetland hydrology is considered one of the most important factors in establishing and maintaining wetland processes (Mitsch and Gosselink, 2000).

Jurisdictional wetlands are those over which the U.S. Army Corps of Engineers (USACE) has regulatory control under Section 404 of the CWA. Wetlands are defined in the USACE *Wetland Delineation Manual* as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (USACE, 1987). The majority of jurisdictional wetlands in the United States are described using three principal wetland delineation criteria: hydrophytic vegetation, hydric soils, and hydrology (USACE, 1987). USFWS uses a simpler classification system that is satisfied by any one of the above three characteristics.

USACE is the lead agency in protecting wetland resources and invokes jurisdiction over federal wetlands (33 CFR 328.3) under Section 404 of the CWA (30 CFR 330) and Section 10 of the

Rivers and Harbors Act (30 CFR 329). The USEPA assists USACE (in an administrative capacity) in the protection of wetlands (40 CFR 225.1 to 233.71). The State of Florida regulates wetlands under the Wetlands/Environmental Resource Permit program under Part IV, Florida Statutes Section 373.

In addition, the USFWS and the National Marine Fisheries Service (NMFS) have important advisory roles. The FDEP's Chapter 62-312, *Dredge and Fill Program*, affords regulatory protection to wetland resources (protection from excavating or filling a wetlands area with dirt, rip-rap, etc.) at the state level. FDEP issues a Section 401 certification under the authority of the CWA (40 CFR 230.10[b]). Section 401 of the CWA requires federal agencies to obtain certification from the state before issuing permits that would result in increased pollutant loads to a water body. The certification is issued only if such increased loads would not cause or contribute to exceedances of water quality standards (USEPA, 2009).

A total of approximately 12 acres of emergent, palustrine wetlands occur within the boundaries of TA B-75, which corresponds to approximately 0.33 percent of the total land area (Table 3-2). These wetlands are associated with the headwaters of Wolf Creek in the northeast portion of the test area and Holley Pond near the eastern boundary (Figure 3-2). Other wetlands occur in association with the surrounding creeks adjacent to TA B-75.

Table 3-2. Land and Wetland Area (Acres) Associated With TA B-75

Total Land Area (Acres)	Associated Wetlands (Acres)	Percent Area Covered by Wetlands
3,557	12	0.33%

3.3.4 Floodplains

Floodplains are lowland areas adjacent to surface water bodies (i.e., lakes, wetlands, and rivers) that are periodically covered by water during flooding events. Floodplains and riparian habitat are biologically unique and highly diverse ecosystems supporting a rich diversity of aquatic and terrestrial species (Mitsch and Gosselink, 2000). Floodplain vegetation promotes bank stability and provides a shading effect to moderate water temperatures. Vegetation and soils act as water filters, intercepting surface water runoff before it reaches lakes, streams, or rivers, and storing floodwaters during flood events. This filtration process aids in the removal of excess nutrients, pollutants, and sediments from the water and helps reduce the need for costly cleanups and sediment removal. Floodplains also reduce downstream flooding by increasing upstream storage in wetlands, sloughs, back channels, side channels, and former channels.

Any actions being considered by federal agencies must be evaluated to determine whether they would occur within a floodplain. Floodplains that must be considered include those areas with a 1-percent chance of being inundated by floodwater in a given year (also known as a 100-year floodplain). EO 11988, *Floodplain Management* (1977, 42 *Federal Register* 26951), requires federal agencies to avoid adverse impacts associated with the occupancy and modification of floodplains and to avoid floodplain development whenever possible. Additionally, EO 11988 requires federal agencies to make every effort to reduce the risk of flood loss, minimize the impact of floods on human health, safety, and welfare, and preserve the natural beneficial value of floodplains. The order stipulates that federal agencies proposing actions in floodplains consider alternative actions to avoid adverse effects, avoid incompatible development in the floodplains, and provide opportunity for early public review of any plans or proposals. If

adverse effects are unavoidable, the proponent must include mitigation measures in the action to minimize impacts.

Parts of the floodplain that are also considered wetlands will, in addition to floodplain zonings, receive protection from federal, state, and local wetland laws. These laws, such as the USACE Section 404 Permit Program, regulate alterations to wetlands to preserve both the amount and integrity of the nation's remaining wetland resources. Specific wetland regulations are described in Section 3.3.3.

Approximately 29 acres of TA B-75 are located within the 100-year floodplain and are associated with Wolf Creek (Figure 3-2). Floodplains represent approximately 0.82 percent of the land area (Table 3-3). Other floodplains occur in association with the surrounding creeks adjacent to TA B-75.

Table 3-3. Land and Floodplain Area Associated With TA B-75

Total Land Area (Acres)	Associated Floodplains (Acres)	Percent Area Covered by Floodplains
3,557	29	0.82%

3.3.5 Coastal Zone

The term *coastal zone* is defined as coastal waters and adjacent shore lands, which strongly influence one another, located in proximity to the several coastal states. The coastal zone includes islands, transitional and inner tidal areas, salt marshes, wetlands, and beaches. Coastal waters are defined as any waters adjacent to the shoreline that contain a measurable amount of sea water, including but not limited to sounds, bays, lagoons, bayous, ponds, and estuaries. The seaward boundary of the coastal zone is the limit of state waters, which for the Gulf coast of Florida is 9 nautical miles from shore. The entire land mass of Florida is considered part of the coastal zone and is subject to the CZMA.

Federal agency activities potentially impacting the coastal zone are required to be consistent, to the maximum extent practicable, with approved state Coastal Zone Management Programs. Federal agencies make determinations as to whether their actions are consistent with approved state plans. Eglin AFB submits consistency determinations to the state for review and concurrence. All relevant state agencies must review the Proposed Action and issue a consistency determination. The Florida Coastal Management Program is composed of 23 Florida statutes that are administered by 11 state agencies and 4 of the 5 water management districts.

Components of the Proposed Action would take place within the jurisdictional concerns of FDEP and therefore would require a consistency determination with respect to Florida's Coastal Zone Management Plan and the CZMA (Appendix F, *CZMA Consistency Determination*).

3.4 BIOLOGICAL RESOURCES

Biological resources include the native and introduced terrestrial and aquatic plants and animals found on and around TA B-75. The habitats of Eglin AFB are home to an unusually diverse

biological community including several sensitive species and habitats, many of which are present on or within 1 km (0.62 mile) of TA B-75.

3.4.1 Ecological Associations

Four broad matrix ecosystems exist on Eglin AFB: sandhills, flatwoods, wetlands/riparian, and barrier island. The ecosystems are defined by floral, faunal, and geophysical similarities. Artificially maintained open grasslands/shrublands and urban/landscaped areas also exist on Eglin, primarily on test areas or Main Base. Although grasslands/shrublands and urban/landscaped areas are not true ecological associations, they are included in this section as land uses as they are present within the study area.

TA B-75 is predominately open grasslands/shrublands with interspersed areas of sandhills, flatwoods, urban/landscaped areas, and wetland/riparian (Figure 3-3) and (Table 3-4). Nearby test areas are sandhills and urban/landscaped areas while areas adjoining TA B-75 are wetland/riparian (Holley Creek) and sandhills. A list of typical species found within each ecological association is provided in Table 3-5 while detailed descriptions of the ecological associations are found in Appendix E, *Biological Resources*.

Table 3-4. Ecological Associations Within TA B-75

Ecological Association	Acres	% of TA B-75 Area
Flatwoods	9.45	0.22
Landscaped Urban	165.41	3.92
Grassland/Shrubland	3521.72	83.44
Sandhills	522.72	12.38
Wetland/Riparian	1.92	0.04
Total	**4220.00**	**100.00**

3.4.2 Sensitive Habitats

Sensitive habitats include areas that the federal government, state government, or the DoD have designated as worthy of special protection due to certain characteristics such as high species diversity, rare plant species, or other unique features. Sensitive habitats on or near TA B-75 include High Quality Natural Communities, wetlands and floodplains; the headwaters of multiple streams are in close proximity to TA B-75 (Figure 3-4). Wetlands and floodplains are discussed in detail in the Water Resources section.

High Quality Natural Communities

Specific areas exist within Eglin AFB that are ecologically unique due to their high quality examples of natural communities or presence of rare species. These areas were identified by the Florida Natural Areas Inventory through a project funded by the DoD Legacy Resource Management Program. Termed “High Quality Natural Communities,” these areas are distinguished by the uniqueness of the community, ecological condition, species diversity, and presence of rare species. TA B-75 contains approximately 2 acres of High Quality Natural Communities (Figure 3-4).

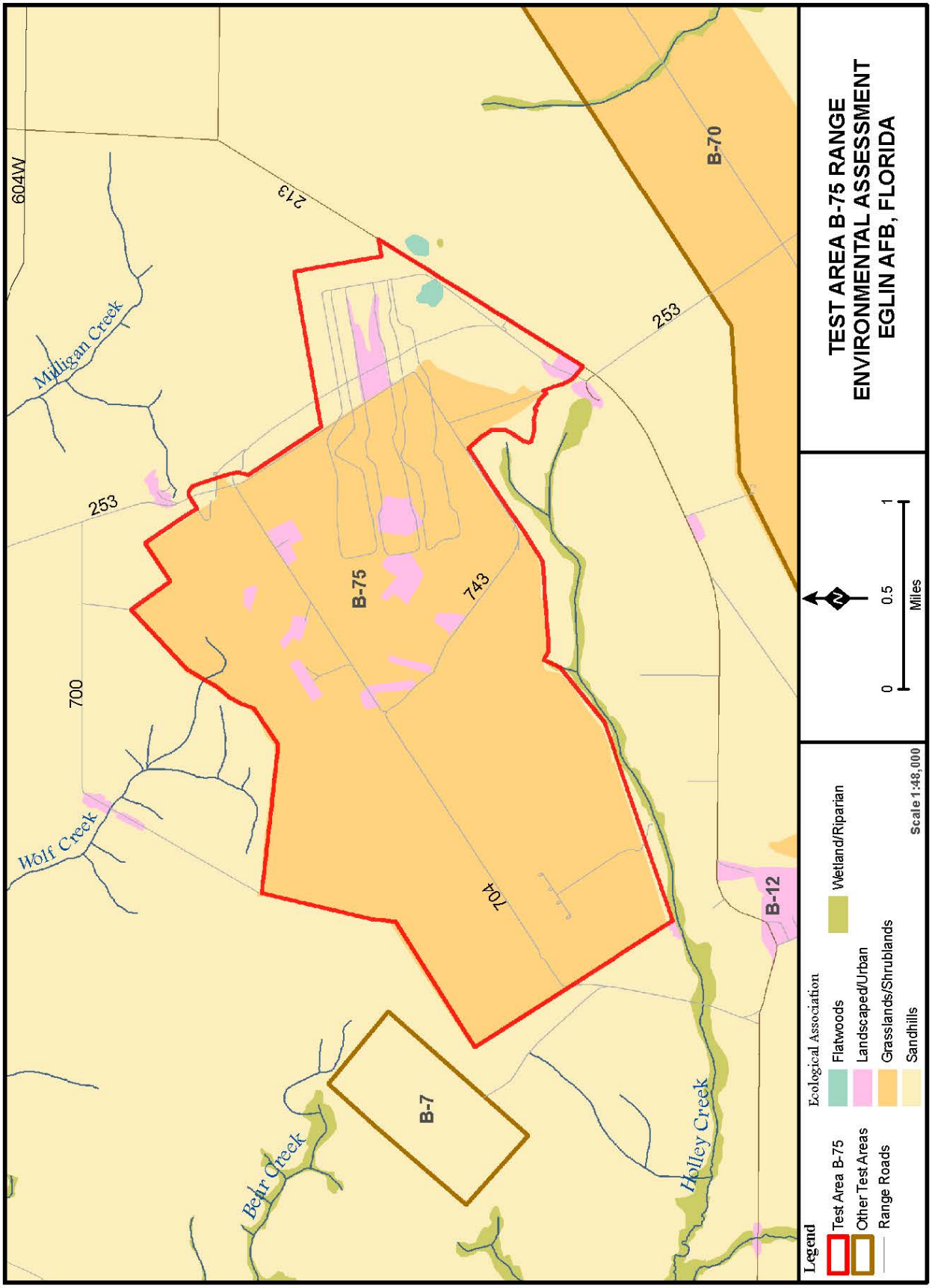

Figure 3-3. Ecological Associations Found on or Near TA B-75

Table 3-5. Typical Species Found Within the Sandhills, Wetland/Riparian, Flatwoods, and Open Grassland/Shrubland Ecological Associations

Plants		Animals	
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
Sandhills Ecological Association			
Longleaf Pine	*Pinus palustris*	Red-cockaded Woodpecker	*Picoides borealis*
Turkey Oak	*Quercus laevis*	Bobwhite Quail	*Colinus virginianus*
Blackjack Oak	*Q. marilandica*	Great Horned Owl	*Bubo virginianus*
Bluejack Oak	*Q. incana*	Gopher Tortoise	*Gopherus polyphemus*
Wiregrass	*Aristida stricta*	Indigo Snake	*Drymarchon corais*
Saw Palmetto	*Serona repens*	Diamondback Rattlesnake	*Crotalus adamanteus*
Bracken Fern	*Pteridium aquilinum*	Six-lined Racerunner	*Cnemidophorus sexlineatus*
Blueberry	*Vaccinium* spp.	Florida Black Bear	*Ursus americanus floridanus*
Yaupon	*Ilex vomitoria*	Fox Squirrel	*Sciurus niger*
Gallberry	*Ilex glabra*	Least Shrew	*Cryptodus parva*
Gopher Apple	*Licania michauxii*	Cottontail Rabbit	*Sylvilagus floridanus*
Blackberry	*Rubus cuneifolius*	Pocket Gopher	*Geomys pinetus*
Sand Pine	*Pinus Clausa*	White-tailed Deer	*Castor canadensis*
Pinewoods Bluestem	*Andropogon arctatus*	Feral Pig	*Sus scrofa*
Wiregrass	*Aristida stricta*	Raccoon	*Procyon lotor*
Wetland and Riparian Ecological Association (Freshwater)			
Yellow Water Lily	*Nymphaea Mexicana* spp.	Raccoon	*Procyon lotor*
Saw Grass	*Cladium jamaicensis*	Florida Black Bear	*Ursus americanus floridanus*
Cattail	*Typha domingensis*	Sherman's Fox Squirrel	*Sciuris niger shermani*
Phragmites	*Phragmites australis*	American Alligator	*Alligator mississippiensis*
White Cedar	*Chamaecyparis thyoides*	Pine Barrens Tree Frog	*Hyla andersonii*
Water Tupelo	*Nyssa biflora*	Five-lined Skink	*Eumeces fasciatus*
Pitcher Plant	*Sarracenis purpurea*	Green Anole	*Anolis carolinensis*
Red Titi	*Cyrilla racemiflora*	Garter Snake	*Thamnophis sirtalis*
Tulip Poplar	*Liriodendrom tulipifera*	Indigo Snake	*Drymarchon corais*
Sweet Bay Magnolia	*Magnolia virginiana*	American Beaver	*Castor canadensis*
Red Bay	*Persea borbonia*	Parula Warbler	*Parula americana*
Flatwoods Ecological Association			
Longleaf Pine	*Pinus palustris*	Wood Duck	*Aix sponsa*
Runner Oak	*Quercus pumila*	Red-winged Blackbird	*Agelaius phoenicius*
Saw Palmetto	*Serona repens*	Cotton Mouth	*Agkistridon piscivorus*
St. John's Wort	*Hypericum brachyphyllum*	Flatwoods Salamander	*Ambystoma cingulatum*
Slash Pine	*Pinus elliottii*	River Otter	*Lutra canadensis*
Black Titi	*Cliftonia monophylla*	Beaver	*Castor canadensis*
Milkweed	*Asclepias humistrata*	Florida Black Bear	*Ursus americanus floridanus*
Pitcherplant	*Sarracenia* spp.	Gray Fox	*Urocyon cinereoargenteus*
Open Grassland/Shrubland Ecological Association			
Switchgrass	*Panicum virgatum*	Red-shouldered Hawk	*Buteo lineatus*
Broomsedge	*Andropogon virginicus*	Southeastern American Kestrel	*Falco sparverius paulus*
Big Bluestem	*Andropogon gerardii*	Florida Burrowing Owl	*Athene cunicularia*

Table 3-5. Typical Species Found Within the Sandhills, Wetland/Riparian, Flatwoods, and Open Grassland/Shrubland Ecological Associations, Cont'd

Plants		Animals	
Common Name	**Scientific Name**	**Common Name**	**Scientific Name**
Open Grassland/Shrubland Ecological Association, Cont'd			
Yellow Indian Grass	*Sorghastrum nutans*	Flycatchers	*Tyrannidae spp.*
Purple Lovegrass	*Eragrostis spectabilis*	Cotton Mouse	*Peromyscus gossypinus*
Woolly Panicum	*Dichanthelium acuminatum*	Slender Glass Lizard	*Ophisaurus attenuatus*
Forbs	*Panicum virgatum*	Gopher Tortoise	*Gopherus polyphemus*

3.4.3 Sensitive Species

Sensitive species are those species protected under federal or state law, to include migratory birds and threatened and endangered species. An *endangered* species is 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 within the foreseeable future throughout all or a significant portion of its range.

The Endangered Species Act (ESA) of 1973 (16 USC 1531 to 1544; 1997–Supp) was enacted to provide for the conservation of endangered and threatened species and the ecosystems on which they depend. Air Force Policy Directive (AFPD) 32-70 directs the implementation of the ESA. Certain federal activities may require an ESA Section 7 consultation with the USFWS and/or NMFS if impacts to federally listed species are possible.

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

Migratory birds are protected under the Migratory Bird Treaty Act (MBTA) (16 USC 703–712; 1997-Supp) and EO 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 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.

Sensitive species found on or near TA B-75 are listed in Table 3-6 and are depicted in Figure 3-4 and Figure 3-5. Detailed descriptions of these species are located in Appendix E, *Biological Resources*.

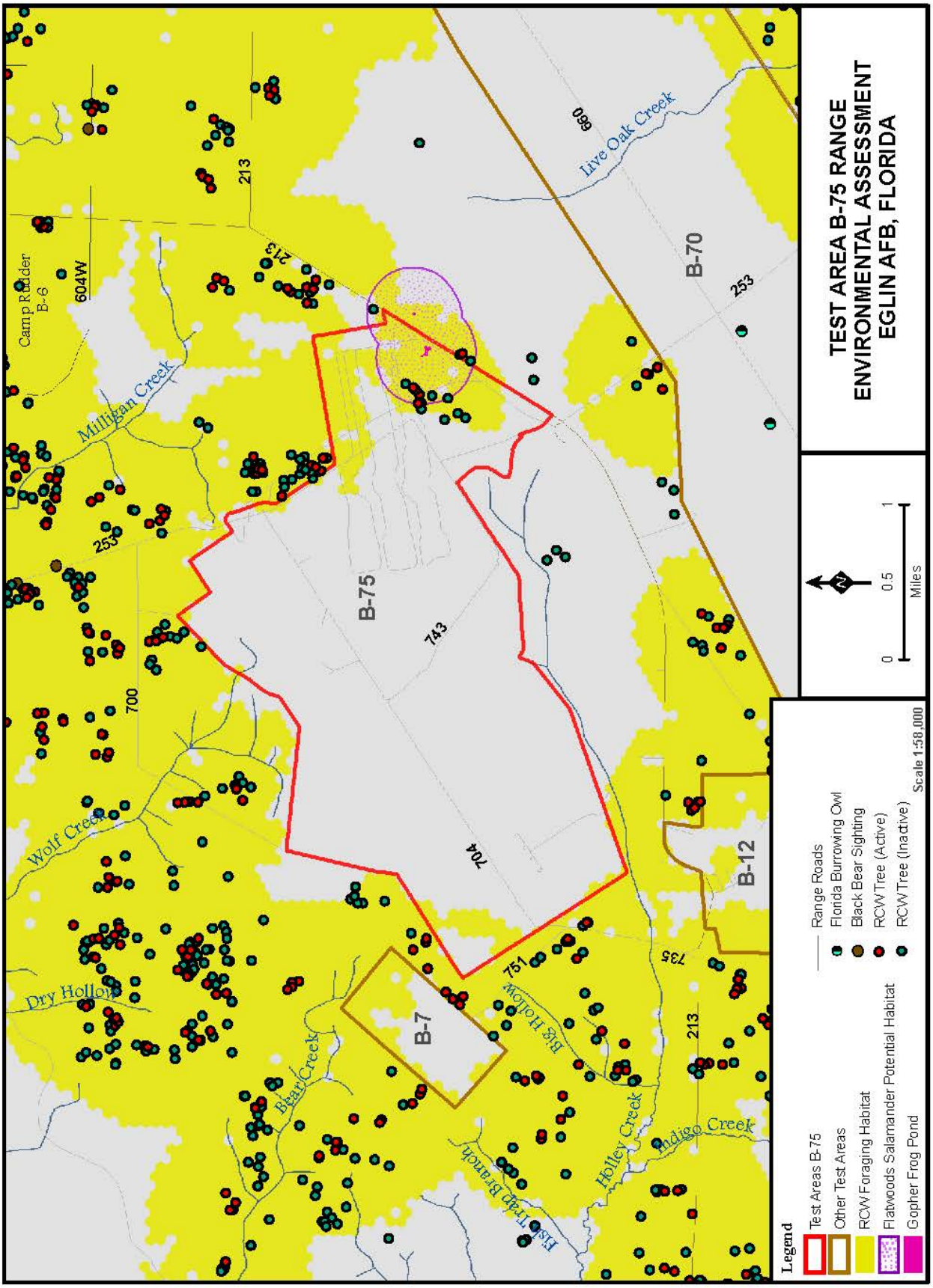

Figure 3-4. Sensitive Habitats and Animal Species Found on or Near TA B-75

Table 3-6. Sensitive Species Found on or Near TA B-75

Scientific Name	Common Name	Status
Amphibians		
Rana capito	Gopher frog	SSC
Ambystoma bishopi[1]	Reticulated flatwoods salamander	SSC; FE
Reptiles		
Pituophis melanoleucus mugitus	Florida pine snake	SSC
Drymarchon corias couperi	Eastern indigo snake	FT, ST
Gopherus polyphemus	Gopher tortoise	ST
Birds		
Falco sparverius paulus	Southeastern American kestrel	ST; MBTA
Picoides borealis	Red-cockaded woodpecker	FE, ST
Mammals		
Ursus americanus floridanus	Florida black bear	ST
Plants		
Baptisia calycosa var villosa	Hairy wild indigo	ST
Tephrosia mohri	Pineland hoary-pea	ST
Carex baltzelli	Baltzell's sedge	ST
Calamovilfa curtissii	Curtiss' sandgrass	ST
Quercus arkansana	Arkansas oak	ST
Magnolia ashei	Ashe's magnolia	SE
Stewartia malacodendron	Silky camellia	SE

FE = Federally Endangered; FT = Federally Threatened; MBTA = Protected Under the Migratory Bird Treaty Act; ST = State Threatened; SSC = State Species of Special Concern; SE = State Endangered
1. Potential flatwoods salamander habitat is present at TA B-75.

3.4.4 Invasive Non-native Species Management

Invasive Non-native Species (INS) includes plants, animals, insects, and other organisms that are spreading and becoming established in regions where they would not naturally be found. An invasive species can be defined as a species that is non-native 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 Eglin AFB INS Management Program focuses on invasive non-native plant and animal species that cause or may cause negative environmental impacts to Eglin ecosystems. Some of the main invasive non-native species of concern are Chinese tallow, cogon grass, Japanese climbing fern, Chinese privet, torpedo grass, feral pigs, and feral cats (U.S. Air Force, 2006b). The program's purpose is to protect the integrity of Eglin's natural ecosystems by reducing and controlling the spread of INS. The plan includes a recommendation to limit foot traffic and vehicle traffic in areas where INS are present to prevent the spread of the invasive and exotic species. Equipment that moves 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 INS.

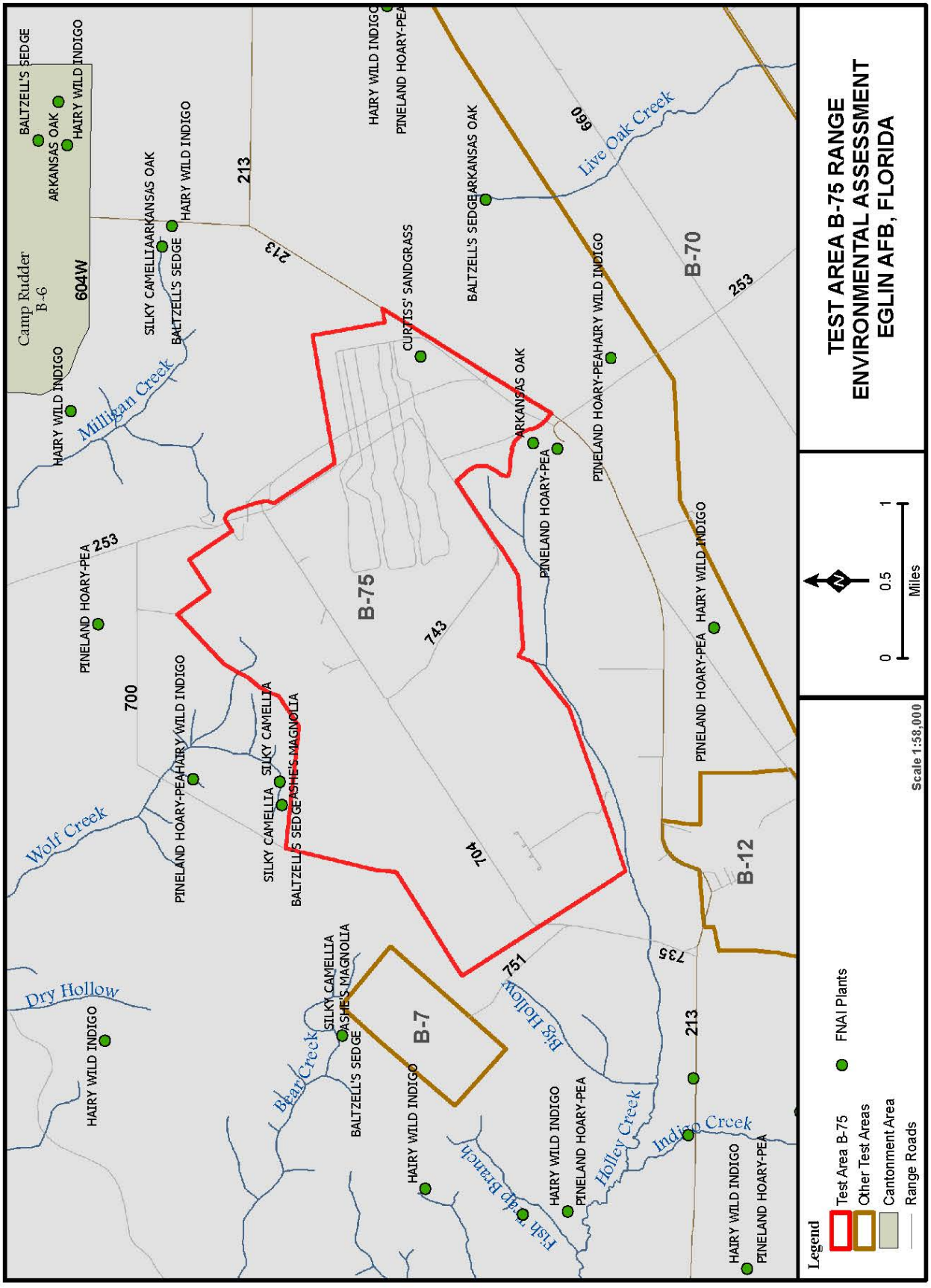

Figure 3-5. Sensitive Plant Species Found on or Near TA B-75

3.5 CULTURAL RESOURCES

3.5.1 Definition

Numerous laws and regulations address the management of cultural resources. These federal laws are in place to consider the effects of an agency's proposed activities when a site could be negatively impacted. Foremost among these is the NHPA of 1966. Section 106 of the NHPA requires that federal agencies analyze the impacts of federal activities on historic properties. Section 110 of the NHPA requires that federal agencies inventory any cultural resources that are located within their boundaries and nominate those found to be significant for inclusion into the NRHP. Additionally, areas potentially impacted by mission activities are surveyed through the Air Force EIAP.

3.5.2 Region of Influence and Existing Conditions

Within TA B-75, all areas are considered surveyed for cultural resources (Shreve, 2010). As a result, additional survey is not required on TA B-75.

Twenty-nine archaeological sites are located within or very near the outer boundaries of TA B-75 (Table 3-7). Of these sites, 9 sites are prehistoric artifact scatters, 10 sites are historic era sites, several of which are associated with the turpentine industry, and 10 sites are historic/ prehistoric multicomponent sites. Additionally, of these 29 sites, 3 historic sites are eligible to the NRHP, and 1 prehistoric site, 4 historic sites, and 4 multicomponent sites are potentially eligible for listing on the NRHP. The remaining 17 sites are ineligible for listing on the NRHP.

Table 3-7. Archaeological Sites Located Within TA B-75

Site Number	Site Name	Site Description	Register Status	Recommend
8OK1056	X-317O	Historic artifact scatter associated with Civilian Conservation Corps	Ineligible	Recommend no further work.
8SR108	RL15	Historic scatter	Potential	Recommend no further work.
8SR108	William Crane Homestead	Historic homestead and naval stores camp (1905–1920s); Spivey and Mathis and later Jennings Naval Stores Company	Ineligible	Recommend no further work.
8SR1425	X-376K	Prehistoric lithic scatter	Ineligible	Recommend no further work.
8SR1427	X-376E	Small prehistoric scatter	Ineligible	Recommend no further work.
8SR1428	X-376F	Prehistoric Weeden Island, Swift Creek, and a historic component.	Ineligible	Recommend no further work.
8SR1429	X-376I	Multiple prehistoric campsites	Ineligible	Recommend no further work.
8SR1432	X-376CC	Prehistoric artifact scatter	Ineligible	Recommend no further work.
8OK142	Milligan Creek Site	Historic/ prehistoric artifact scatter	Ineligible	Recommend no further work.
8OK276	X-160B	Historic homesite associated with turpentine still	Eligible	Protection until more extensive subsurface testing is made.
8OK276	X-160B	Historic scatter	Potential	Recommend site testing.
8OK277	X-160C	Historic homesite associated with turpentine still	Eligible	Protection until more extensive surface testing is made.

Table 3-7. Archaeological Sites Located Within TA B-75, Cont'd

Site Number	Site Name	Site Description	Register Status	Recommend
8OK277	X-160C	Historic scatter	Potential	Recommend site testing.
8OK1052	X-317J	Prehistoric woodland campsite	Ineligible	Recommend no further work.
8OK1053	X-317D/E	Holleman turpentine still and associated structures	Potential	Evaluative testing and archival research.
8OK1053	X-317D/E	Historic scatter	Eligible	Protection and eventual extensive testing.
8OK1054	X-317C	Historic and prehistoric occupations	Ineligible	Recommend no further work.
8OK1054	X-317C	Prehistoric/historic scatter	Potential	Evaluative testing.
8OK1055	X-317I	Prehistoric/historic scatter	Ineligible	Recommend no further work.
8OK1055	X-317I	Prehistoric/historic scatter	Potential	Evaluative testing.
8OK1057	X-317P	Historic scatter	Ineligible	Recommend no further work.
8OK1215	X-376Y	Prehistoric lithic scatter	Ineligible	Recommend no further work.
8OK1216	X-376A	Possible prehistoric woodland due to ceramic scatter and historic brick scatter	Ineligible	Recommend no further work.
8OK1217	X-376O/P	Prehistoric/historic artifact scatter	Ineligible	Recommend no further work.
8OK1892	X-625D	Indeterminate prehistoric	Ineligible	Recommend no further work.
8OK1891	X-625A	Prehistoric unspecified and 20th century military activity	Potential	Recommend avoidance until site is tested.
8OK2148	X-624G	Prehistoric Weeden Island component	Ineligible	Recommend no further work.
8OK2143	X-624L	Prehistoric Weeden Island component	Potential	Recommend site testing.
8OK2242	Emanuel Simon Homestead	Prehistoric isolated find and early 20th-century homestead	Potential	Recommend site testing and archival research.

There are nine potentially eligible sites located within or very near the outer boundaries of the TA B-75 test range. These sites consist of historic and prehistoric artifact scatters, evidence of turpentine camp operations, and early 20th-century homestead sites. Additionally, there are three sites considered eligible for listing on the NRHP. Both 8OK276 and 8OK277 are significant homestead sites associated with the turpentine industry; 8OK1053 is a significant historic scatter.

Nine structures are listed within TA B-75 (Table 3-8). These structures are individually considered ineligible for the NRHP. However, due to these structures' association with a significant period and significant events in U.S. history (i.e., the Cold War), they must be evaluated collectively, and any demolition, renovation, or heavy modification of these buildings must be vetted through 96 CEG/CEVSH.

Table 3-8. Historic Structures Located Within TA B-75

Site #	Facility ID #	Name	Time Period	NRHP Status
8OK01935	9400	Range Control House	Cold War (1957)	Ineligible
8OK01937	9403	Spotting Tower B-127	Cold War (1956)	Ineligible
8OK01938	9405	Gap Filler Radar Station	Cold War (1957)	Ineligible
8SR01664	9406	Spotting Tower B-128	Cold War (1956)	Ineligible
8SR01665	9407	Theodolite Camera Tower B-111	Cold War (1957)	Ineligible
8OK01939	9408	Instrument Station	Cold War (1957)	Ineligible
8OK01940	9409	Theodolite Camera Tower	Cold War (1957)	Ineligible
8OK01941	9410	Spotting Tower	Cold War (1956)	Ineligible
8OK01942	9411	Spotting Tower	Cold War (1956)	Ineligible

Metts Cemetery, a historic and protected burial site, is located outside of the boundaries of TA B-75, near the southeast corner of the range. This site must be avoided if ground-disturbing activities are planned.

The location-specific information is sensitive, and 96 CEG/CEVSH should be consulted on a need-to-know basis. Until a complete survey of the areas has been accomplished, the danger of direct physical impact to unknown cultural resources is always a possibility. Also, as these site lists and survey areas are continuously being updated, consultation with 96 CEG/CEVSH is required to obtain the latest information for any ground-disturbing activities that might impact these areas.

3.6 AIR QUALITY

3.6.1 Definition

Air quality is determined by the type and amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. The levels of pollutants are generally expressed on a concentration basis in units of parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$).

The baseline standards for pollutant concentrations are the National Ambient Air Quality Standards (NAAQS) and state air quality standards (Table 3-9). These standards represent the maximum allowable atmospheric concentration that may occur and still protect public health and welfare. Based on measured ambient air pollutant concentrations, the USEPA designates whether areas of the United States meet the NAAQS. Those areas demonstrating compliance with the NAAQS are considered "attainment" areas, while those that do not demonstrate compliance are known as "nonattainment" areas. Those areas that cannot be classified on the basis of available information for a particular pollutant are "unclassifiable" and are treated as attainment areas until proven otherwise.

Table 3-9. National Ambient Air Quality Standards

Time Period	NAAQS Standards ($\mu g/m^3$)			
	CO	**NO_x**	**PM**	**SO_x**
Annual (Primary)		100	50	80
24-hr Avg (Primary)			150	365
8-hr Avg (Primary)	10,000			
3-hr (Secondary)				1,300
1-hr Avg (Primary)	40,000			

$\mu g/m^3$ = Micrograms per Cubic Meter; Avg = Average; CO = Carbon Monoxide; hr = Hour; NO_x = Nitrogen Oxides; PM = Particulate Matter; SO_x = Sulfur Oxides

3.6.2 Region of Influence and Existing Conditions

An air emissions inventory qualitatively and quantitatively describes the amount of emissions from a facility or within an area. Emissions inventories are designed to locate pollution sources, define the type and size of the sources, characterize emissions from each source, and estimate total mass emissions generated over a period of time, normally a year. These annual rates are typically represented in tons per year. Inventory data establishes relative contributions to air pollution concerns by classifying sources and determining the adequacy as well as the necessity of air regulations. Accurate inventories are imperative for the development of appropriate air quality regulatory policy.

The most recent air emissions inventories for Eglin AFB quantify emissions from stationary and mobile sources based on calendar year activities. Stationary sources include equipment/ processes such as boilers, electric generators, surface coating, and fuels handling operations. Mobile sources include motor vehicles, aerospace ground support equipment, and aircraft operations.

For comparison purposes, Table 3-10 presents the USEPA's 2002 National Emissions Inventory (NEI) data for Okaloosa and Santa Rosa Counties (USEPA, 2002). The county data includes emissions data from point sources, area sources, and mobile sources. Point sources are stationary sources that can be identified by name and location. Area sources are point sources whose emissions are too small to track individually, such as a home or small office building or a diffuse stationary source, such as wildfires or agricultural tilling. Mobile sources are any kind of vehicle or equipment with gasoline or diesel engine, an airplane, or a ship. Two types of mobile sources are considered: on-road and non-road. On-road mobile sources consist of vehicles such as cars, light trucks, heavy trucks, buses, engines, and motorcycles. Non-road sources are aircraft, locomotives, diesel and gasoline boats and ships, personal watercraft, lawn and garden equipment, agricultural and construction equipment, and recreational vehicles (USEPA, 2005).

Table 3-10. Baseline Emissions Inventory for Okaloosa and Santa Rosa Counties

Source Type	Emissions (tons/year)				
	CO	**NO_x**	**PM**	**SO_x**	**VOCs**
Okaloosa County					
Area Sources	1,867	281	8,397	462	4,527
Non-road Mobile	16,150	1,099	162	109	1,897
On-road Mobile	45,228	5,703	153	256	3,829
Point Sources	28	49	24	12	79
Total	**63,273**	**7,132**	**8,736**	**839**	**10,332**
Santa Rosa County					
Area Sources	2,142	233	13,265	323	3,291
Non-road Mobile	9,806	950	120	89	1,524
On-road Mobile	40,237	5,341	147	238	3,286
Point Sources	867	4,570	776	2,362	418
Total	**53,052**	**11,094**	**14,308**	**3,012**	**8,519**
Region of Influence					
Area Sources	4,009	514	21,662	785	7,818
Non-road Mobile	25,956	2,049	282	198	3,421
On-road Mobile	85,465	11,044	300	494	7,115
Point Sources	895	4,619	800	2,374	497
Total	**116,325**	**18,226**	**23,044**	**3,851**	**18,851**

Source: USEPA, 2002
CO = Carbon Monoxide; NO_x = Nitrogen Oxides; PM = Particulate Matter; SO_x = Sulfur Oxides; VOCs = Volatile Organic Compounds

In order to evaluate air emissions and their impact on the overall ROI, the emissions associated with the project activities were compared to the total emissions on a pollutant-by-pollutant basis for the ROI's 2002 NEI data. Potential impacts to air quality are identified as the total emissions of any pollutant that equals 10 percent or more of the ROI's emissions for that specific pollutant. The 10-percent criterion approach is used in the USEPA's General Conformity Rule as an indicator for impact analysis for nonattainment and maintenance areas. According to USEPA's General Conformity Rule in 40 CFR Part 51, Subpart W, any proposed federal action that has the potential to cause violations in a NAAQS nonattainment or maintenance area must undergo a conformity analysis. A conformity analysis is not required if the proposed action occurs within an attainment area. Emissions from activities on TA B-75 would also be compared to the federal NAAQS.

3.7 NOISE

3.7.1 Definition

Noise is defined as any unwanted sound. Defining characteristics of noise include sound level (amplitude), frequency (pitch), and duration. Each of these characteristics plays a role in determining the intrusiveness and level of impact of the noise on a noise receptor. The term *noise receptor* is used in this document to mean any person, animal, or object that hears or is affected by noise.

Sound levels are measured on a logarithmic decibel (dB) scale, reflecting the relative way in which differences in sound energy levels are perceived. A sound level that is 10 dB higher than another would normally be perceived as twice as loud, while a sound level that is 20 dB higher than another would be perceived as four times as loud. Under laboratory conditions, a person with normal hearing can detect a change in sound level as small as 1 dB. Under most nonlaboratory conditions, the people will notice changes in sound level of approximately 3 dB.

Sound measurement may be further refined through the use of frequency "weighting." A typical healthy human can detect sounds that range in frequency from about 20 hertz (Hz) to 20,000 Hz (Federal Interagency Committee on Noise [FICON], 1992). However, all sounds throughout this range are not heard equally well. In "A-weighted" measurements, the frequencies in the 1,000- to 4,000–Hz range are emphasized because these are the frequencies to which human hearing is most sensitive. Sound level measurements weighted in this way are termed *A-weighted decibels* (dBA). In the case of sonic booms, blast noise, and other impulsive "booming" noises, sound is felt as well as heard. With these types of noise, overpressure may be considered more annoying than the sound itself. For this reason, impulsive sounds are measured using "C-weighting," which does not attenuate the lower frequencies to the extent that A-weighting does. Sound level measurements weighted in this way are termed *C-weighted decibels* (dBC). Unless otherwise noted, all sound levels referenced in this REA can be assumed to be A-weighted.

Typically, the sound level at any given location changes constantly. For example, the sound level changes continuously when an aircraft flies by, starting at the ambient (background) level, increasing to a maximum when the aircraft passes closest to the receptor, and then decreasing to

ambient levels when the aircraft flies into the distance. The term *maximum sound level*, or "L_{max}" represents the sound level at its greatest level during an aircraft overflight when sound is at its maximum.

Because munition noise levels are so strongly influenced by meteorological conditions (e.g., winds), the peak noise level reaching a particular location after a particular noise event may vary significantly. The metric "Peak Noise Exceeded by 15 Percent of Firing Events," or "PK_{15}(met)," accounts for weather-influenced statistical variation in received single-event peak noise levels. PK_{15}(met) is the peak noise level, without frequency weighting, expected to be exceeded by 15 percent of all firing events. Because this value is based on probability and actual noise levels would vary higher and lower, it cannot be directly measured in the field. If multiple weapon types are fired from one location, or from multiple firing locations, the reported PK_{15}(met) level would be based on the loudest weapon type at the closest location. The U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) recommends this metric as a supplement to time-averaged noise levels when discussing impulsive noise (USACHPPM, 2005).

Because both the duration and frequency of noise events also play a role in determining overall noise impact, several metrics are used that account for these factors. Each metric discussed below may be used in the assessment of noise impacts in this REA.

- Sound Exposure Level (SEL) accounts for both the L_{max} and the length of time a sound lasts. SEL does not directly represent the sound level heard at any given time. Rather, it provides a measure of the total sound exposure for an entire event compressed into one second. This metric is useful for comparing fast-moving and slow-moving aircraft and is a good predictor of several noise impacts, including sleep disturbance and speech interference.
- Day–Night Average Sound Level (DNL) represents aircraft noise level averaged over a 24-hour period, with a 10-dB penalty to flights occurring between 10:00 PM and 7:00 AM to account for the added intrusiveness of noise during these hours. It is important to recognize that the DNL metric does not represent the noise heard at any single point in time, but rather a weighted average level of noise events that occur over the course of a day. The DNL metric has been endorsed by several federal agencies as being the best descriptor of general noise conditions in the vicinity of airfields (USEPA, 1974; Federal Interagency Committee on Urban Noise [FICUN], 1980).
- C-weighted DNL (CDNL) is the 24-hour day–night averaged C-weighted sound level computed for areas subjected to sonic booms and blasts from high explosives. Use of the C-weighted scale accounts for the dominance of low-frequency components of these types of sounds.
- Onset-Rate Adjusted Monthly Day–Night Average Sound Level is the measure used for subsonic aircraft noise in military airspace (ranges, military training routes, military operating areas, or warning areas). This metric accounts for the fact that when military aircraft fly low and fast, the sound can rise from the ambient level to its maximum very quickly. Known as an onset-rate, this effect can make noise seem louder due to added "startle" effects. Penalties of up to 11 dB are added to account for this onset-rate.

3.7.2 Effects of Noise

Annoyance, speech interference, sleep interference, human health impacts, structural damage, and wildlife impacts have all been associated with noise. In this document, the "Noise" section of each chapter addresses general noise impacts on humans and structures, while subsequent sections discuss the impacts of noise on land use, environmental justice, biological resources, and cultural resources.

Annoyance is the most common effect of aircraft noise on humans. Aircraft noise often interferes with activities such as conversation, watching television, using a telephone, listening to the radio, and sleeping. This interference often contributes to individuals becoming annoyed. Whether or not an individual becomes annoyed by a particular noise is highly dependent on emotional and situational variables of the listener as well as the physical properties of the noise (Federal Aviation Administration [FAA], 1985). However, when assessed over long periods of time and with large groups of people, a strong correlation exists between the percentage of people highly annoyed by noise and the time-averaged noise exposure level in an area (Schultz, 1978; Finegold et al., 1994). This finding is based on surveys of groups of people exposed to various intensities of transportation noise. A generalized categorization of noise-induced annoyance can be found in Table 3-11. As discussed earlier in this section, DNL (A-weighted) is used to assess noise for which audible sound is the major concern (e.g., subsonic aircraft noise, small arms fire). CDNL (C-weighted) is used to assess noise in which vibration and low-frequency components are a major concern (e.g., sonic booms, high-explosive munitions noise).

Table 3-11. Relationship Between Noise Level and Percent of Population Highly Annoyed

Criteria	Percent of Population Highly Annoyed		
	< 15%	15%–39%	>39%
	Noise Level		
A-weighted average noise levels (continuous noise)	< 65 dB	65–75 dB	> 75 dB
C-weighted average noise levels (impulsive noise)	< 62 dBC	62–70 dBC	>70 dBC
Unweighted peak noise levels (small arms noise)	< 87 dBP	87–104 dBP	>104 dBP

Source: USACHPPM, 2005; U.S. Army, 1997
< = less than; > = greater than; dB = decibels; dBC = C-weighted decibels; dBP = P-weighted decibels
Note: The primary noise metric used by the U.S. Army to describe small arms noise is PK_{15}(met).

The USEPA has recommended that the noise level in sleeping areas be less than 45 dB DNL (USEPA, 1974). As modern homes typically provide an exterior–interior noise level reduction of greater than 20 dB (U.S. Navy, 2005), residential areas in areas where noise is higher than 65 dB DNL are assumed to not meet this recommendation. Studies indicate a tendency for humans to habituate to regularly occurring nighttime noise over time, eventually reducing susceptibility to noise-induced sleep disturbance (Fidell et al., 1995; Pearsons et al., 1995; Kryter, 1984).

The USEPA recommends that, to protect public health with an adequate margin of safety, exterior noise levels should not exceed 55 dB DNL and interior noise levels should not exceed 45 dB DNL in noise-sensitive locations (USEPA, 1974). FICUN took these recommendations

into consideration when developing its recommendations on compatibility of land uses with noise (FICUN, 1980). These recommendations have been adopted, with minor modifications, by the DoD (DoD Instruction 4165.57).

Noise is generally viewed as being one of a number of general biological stressors. Some studies have indicated that excessive exposure to intense noise might contribute to the development and aggravation of stress-related conditions such as high blood pressure, coronary disease, ulcers, colitis, and migraine headaches. Other studies have found no correlation between noise and various health conditions. Non-auditory health effects of noise are not well established at this time, but are likely only experienced at extremely high noise levels (USEPA, 1981).

A considerable amount of data on noise-related hearing loss has been collected and analyzed. For example, it has been established that 8 hours of continuous exposure to 85 dB increases the risk for potential permanent hearing loss over a 40-year period (USEPA, 1974). The National Academy of Sciences Committee on Hearing, Bioacoustics, and Biomechanics (CHABA) identified 75 dB DNL as the minimum level at which hearing loss may occur (CHABA, 1977). However, it is important to note that CHABA assumed long-term exposure (40 years) before hearing loss would occur. The U.S. Army has established a peak noise level of 140 dB as the threshold above which a temporary threshold shift (measured as increase in lowest level at which a sound is audible) may occur (USACHPPM, 2005).

Sonic booms and other impulsive noises have the potential to damage structures in addition to causing annoyance. The probability of damage has been linked to the peak overpressure of the boom. At a peak, unweighted noise level of 128 dB, the probability of a window in good condition breaking ranges from 1 in 100,000 to 1 in 100 million, depending on the type of glass and other situation-specific factors (Haber and Nakaki, 1989). The probability of breakage increases dramatically if the window is cracked before the impulsive noise occurs. The probability of damage to plaster at this same overpressure ranges between 1 in 1,000 to 1 in 10 million depending on the strength of the wall, as quantified by static failure pressure in lbs per square foot (psf). Plaster failure may also occur as a result of sonic booms. Both glass and plaster failure probabilities are highly dependent on the condition of the structure at the time of the overpressure event.

3.7.3 Existing Noise Environment

Ambient noise is the combination of all sounds, near and far, at a particular location, excluding the sound source of interest, such as a mission activity. Natural wind, wildlife (for example, birds), aircraft, and vehicular traffic are primary contributors to the ambient noise environment at TA B-75. Vehicles associated with nearby highways and aircraft operating in the vicinity also contribute to the daily noise environment. Ambient noise is an important consideration when determining potential impact from an action. Generally, USEPA and Air Force studies predict that noise from a given sound source that raises the average noise level 5 dB above ambient levels is intrusive and will likely generate widespread complaints. For noise levels over 20 dB above ambient levels, a more negative reaction may be expected (U.S. Army, 2001).

There are several populated areas north of the test area, including Parkerville (4.0 miles) and Harold (5.5 miles). Noise generated by TA B-75 missions may also affect residential areas between Hurlburt Field and Fort Walton Beach. The primary sensitive species of concern is the RCW.

3.8 SAFETY

The existing safety environment encompasses risk to public health and, with respect to training activities, risk to the health of military personnel, and those measures designed to minimize that risk. For actions occurring on military property with inherent safety risks, procedures are in place that minimize or eliminate altogether risks to the public. Such measures include the designation of areas as "restricted" or "closed" to the public, either permanently or temporarily. Such closures are driven by the dimensions of the "safety footprint" of a particular action that may have potentially harmful noise, blast, or other effects, or by the existence of UXO from historical missions.

This section presents information concerning the existing range safety conditions at Eglin AFB. It includes a discussion of the safety regulations and process, safety organizations and responsibilities, and other safety procedures.

3.8.1 Regulatory and Management Overview

This section discusses the regulations, policies, and management protocols in place at Eglin AFB for range safety that impact TA B-75 use. The primary regulations that establish relevant safety policy and define requirements and procedures for conducting tests on Eglin AFB and areas under its jurisdiction are found in AAC Instruction 91-201, *Test Safety Review Process*. This guidance is implemented by the AAC Range Safety Office and supporting organizations. The Test Safety Review Process described in AAC Instruction 91-201 implements the Operational Risk Management (ORM) process, as specified in AFI 90-901 for all AAC test programs, and reflects the practical application of ORM as outlined in Air Force Pamphlet 90-902, *ORM Guidelines and Tools*. The steps in the ORM process, as they relate to the Test Safety Review Process are:

(1) Identify the hazards. Personnel involved with the test or activity act as a team to identify all potential hazards.

(2) Assess the potential risk. Assess the probability and severity of loss from exposure to the identified hazard.

(3) Analyze risk control measures. Investigate specific strategies and tools that reduce, mitigate, or eliminate the risk.

(4) Make control decisions. Approve the best risk control or combination of controls based on the analysis of overall costs and benefits.

(5) Implement risk controls. Once procedures to minimize identified hazards have been determined and approved at the appropriate level, those procedures are implemented during the test.

(6) Supervise and review. Continue the ORM process throughout the accomplishment of every test program.

This instruction affects all test operations that are conducted under a 46 TW Test Directive. It includes ground training activities involving personnel, aircraft, equipment, or airspace. It applies to system program managers, program engineers, test engineers, range safety engineers, and aircrews that are responsible for incorporating safety planning and review into the conduct of test and training programs. Safety procedures associated with routine training operations are implemented through the individual organization, based on its specific training protocols/guidance.

A number of standard safety procedures exist to ensure limited public access to affected training areas during test implementation. These procedures require every practical effort to keep the designated training areas clear of all nonparticipating persons and vehicles.

Large portions of Eglin AFB are closed to public use, which facilitates range clearance operations. Depending on the type of training being conducted, contingency personnel may stand by in case of emergencies (U.S. Air Force, 2003a).

3.8.2 Unexploded Ordnance

UXO is defined as any munition device containing explosive material (i.e., live) that did not detonate upon impact with the surface but still has the potential to detonate. UXO is a potential problem across much of the Eglin Range Complex as a result of past mission activities. Eglin AFB has been testing munitions for over 60 years. During its long history, a vast number of different munition items have been expended throughout the Range as part of routine training and special testing activities. While UXO is an unintended but unavoidable consequence of any operation involving energetic material, only recently has the Air Force published standards for munitions residue maintenance, remediation, and documentation.

Eglin has conducted an archive search in order to document the locations of formerly used ranges but has yet to conduct any basewide assessment of UXO contamination suitable to support an analysis of risk to training units. Previous informal analyses have centered on identifying areas with low enough risk to allow public recreation or to outgrant nonexcess real property. Currently, the AAC Directorate of Safety office handles requests on a case-by-case basis and controls the risk by limiting the type, location, or frequency of the requested action based on an informal risk assessment using local historical knowledge, the USACE Archive Search Report, and the Eglin Reservation Explosives Contamination study from July 1976.

Some areas of Eglin AFB have been classified as clean and do not have access restrictions. These areas either have never been used for munitions and/or the near surface has been checked for the presence of UXO. However, much of the range is considered potentially contaminated with UXO that may have resulted from historical activities (U.S. Air Force, 1998b). TA B-75 is known to have been used for munitions testing and therefore is considered likely to be contaminated with UXO. Therefore, TA B-75 is permanently closed to public access (Figure 3-6).

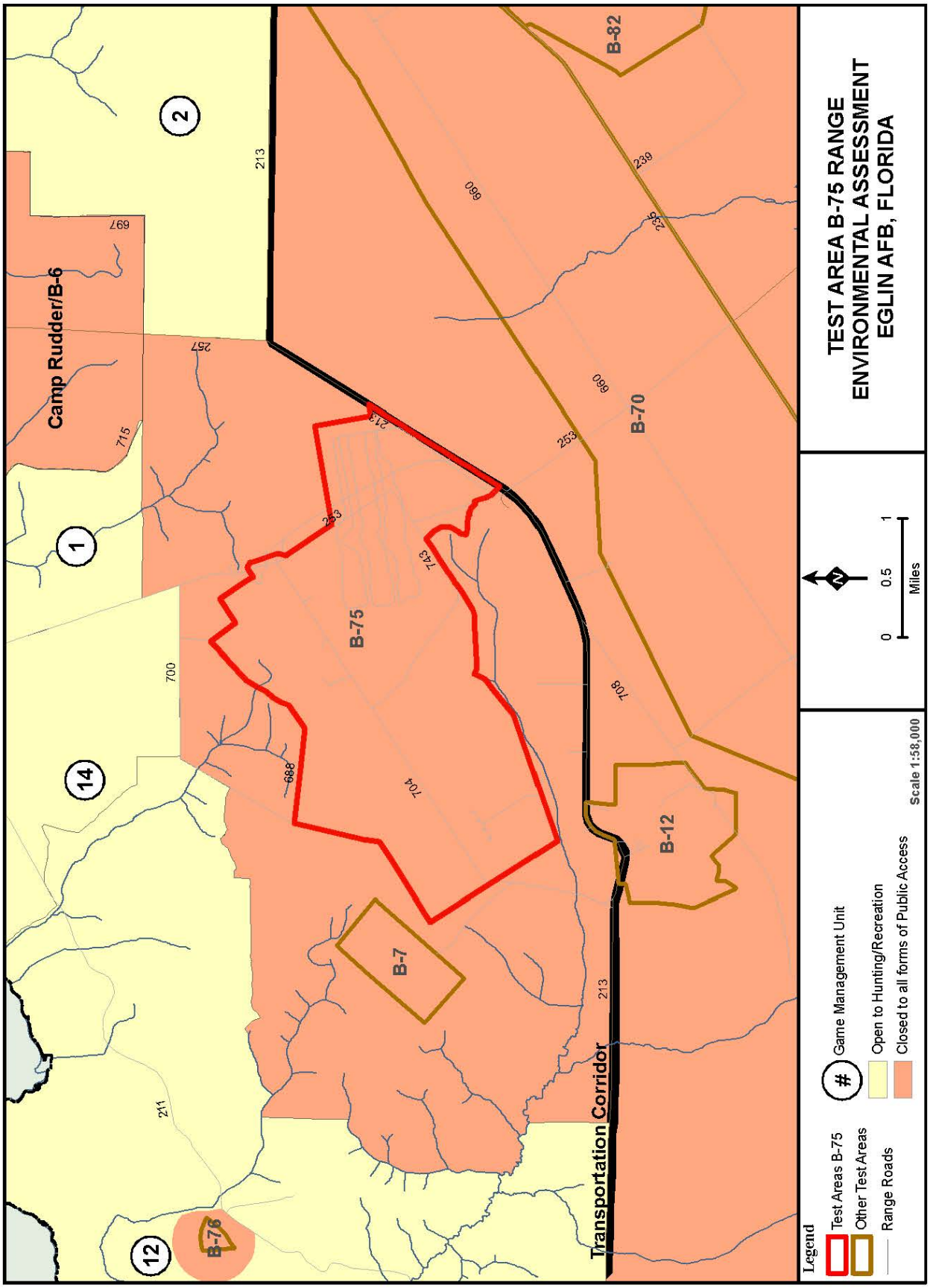

Figure 3-6. Restricted Access at and Around TA B-75

3.8.3 Restricted Access

Restricted access pertains to the temporary closure of areas on Eglin AFB because of mission activities. The purpose of restricting access to the public during these times is to ensure their safety while maintaining mission integrity. Receptors potentially impacted would include the military and the public desiring to use recreational areas. Guidance for restricted access is utilized to coordinate public and military use of land within the Eglin AFB Range. Range areas in use are closed to all forms of public recreation. Areas permanently closed to the public are shown in Figure 3-6. Some military missions may require certain areas to be closed to the public for various periods of time. Recreational access information is available on a daily basis by calling the Base Information Line, (850) 882-1110.

3.9 LAND USE

Land use generally refers to human management and use of land. At TA B-75, the current land uses consist of only military testing and training. Nearby land use also includes recreational and natural resources management, which is discussed in detail in the *Integrated Natural Resources Management Plan* (U.S. Air Force, 2007a).

Eglin has 465,693 acres of land range with 50 land test areas in Okaloosa, Santa Rosa, and Walton Counties, and a small section in Gulf County. Approximately 14,000 acres are improved, 46,000 acres are semi-improved, and 405,000 acres are unimproved. Eglin manages the Joint Gulf Range Complex, a complex that has over 120,000 square miles of overland and overwater airspace. Management of adjacent land and water areas provide Eglin AFB a sea-to-land transition area necessary for modern weapons system research, development, testing, and evaluation. The armed services also use Eglin land and water ranges to train.

Existing Conditions

TA B-75 is utilized for military testing and training activities and therefore, closed to the public. Recreational areas are only located within interstitial areas on Eglin and not within the boundaries of the test areas. However, at times military-related activities can overlap with other land uses, including recreation. More detailed information on the types of military testing and training activities on TA B-75 are provided in Chapter 2, Section 2.2.

There are approximately 280,000 acres of land open for outdoor recreation (Johnson, 2010). Public recreation on Eglin is permitted during daylight hours only, with the exception of approved campsites after sunset. Outdoor activities include hunting, fishing, hiking, and camping. The total number of recreational permits sold for fishing, camping, and recreation use on Eglin AFB is available (Table 3-12); however, the number on the frequency of use or the specific areas where permit holders visit is not available (Johnson, 2010).

Table 3-12. Total Number of Recreational Permits Sold at Eglin AFB, FY 2009

Activity	Number of Permits
Hunting	5,725
Fishing	5,207
Camping	614
Recreational	5,786
Total	**17.332**

Source: Johnson, 2010

There are 15 management units on Eglin AFB, each having its own regulations associated with seasons, mission activities, and access to the public and DoD-affiliated persons. The closest management units to TA B-75 are Management Units #14 and #1, both located approximately 1 mile north of the test area. Management Unit #2 is located approximately 1 mile east of the test area (Figure 3-6). These management areas are open to hunting and recreation. All persons that engage in outdoor recreational activities are required to adhere to applicable Eglin AFB, federal, and state laws, rules, and regulations. General regulations are in place that address prohibited actions; for example, disturbing or removing any government property from the Eglin Reservation is prohibited. Entry into both "closed" areas is prohibited unless the Commander of Eglin AFB has granted special permission. Areas designated as "seasonally closed" are typically closed except during hunting season and areas designated as "open" are available for all types of outdoor recreation. Annual rules, regulations, permits, and maps for recreational activities can be obtained from the Natural Resources Section (96 CEG/CEVSN) at Eglin AFB.

3.10 SOCIOECONOMIC RESOURCES

This section discusses the socioeconomic resources that have the potential to be impacted by activities occurring on and surrounding TA B-75 at Eglin AFB. The primary issues of concern include the disproportionate impact of noise from testing and training activities occurring on TA B-75 to environmental justice concern areas as well as to areas containing a high concentration of children.

3.10.1 Environmental Justice

In 1994, EO 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations (Environmental Justice)*, was issued to focus the attention of federal agencies on human health and environmental conditions in minority populations and low-income populations. The EO was established to ensure that disproportionately high and adverse human health or environmental effects of federal actions on these populations are identified and addressed. The environmental justice analysis addresses the characteristics of race, ethnicity, and poverty status of populations residing in areas potentially affected by the proposed federal action. The purpose of this analysis is to identify disproportionate human health and safety and environmental impacts on minorities and low-income communities and to identify appropriate alternatives.

The DoD Strategy on Environmental Justice was adopted on 24 March 1995. It includes a summary report, strategy on environmental justice, and implementation plan and states that DoD will use NEPA as the primary mechanism to implement the provisions of EO 12898. AFI 32-7061, 1995, *The Environmental Impact Analysis Process,* addresses the need for consideration of environmental justice issues in the impact analysis process. Areas of concern for Environmental Justice in relation to TA B-75 are given in Figure 3-7.

For the purpose of this analysis, minority and low-income populations are defined as follows:

Minority Populations: All persons identified by the U.S. Census Bureau's Census of Population and Housing to be of Hispanic or Latino origin, regardless of race, plus non-Hispanic persons who are Black or African American, American Indian and Alaskan Native, Asian, Native Hawaiian and Other Pacific Islander, Some Other (i.e., non-White) Race, or Two or More Races. For purposes of the analysis, the minority population is calculated by subtracting the number of persons who are White but not Hispanic, from the total population.

Low-Income Populations: All persons that fall within the statistical poverty thresholds published by the U.S. Census Bureau in the Current Population Survey are considered to be low-income. For the purposes of this analysis, low-income populations are defined as persons living below the poverty level ($16,895 for a family of four with two children, adjusted based on household size and number of children), as reported in the 2000 Census. The 2000 Census asked people about their income in the previous calendar year. Therefore, poverty estimates reported in the 2000 Census compare family income in 1999 with the corresponding 1999 poverty thresholds. If the total income for a family or unrelated individual falls below the relevant poverty threshold, then the family or unrelated individual is classified as being below the poverty level.

The percentage of low-income persons is calculated as the percentage of all persons for whom the Census Bureau determines poverty status, which is generally a slightly lower number than the total population because it excludes institutionalized persons, persons in military group quarters and college dormitories, and unrelated individuals under 15 years old.

3.10.2 Risks to Children

In 1997, EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (*Protection of Children*), was issued to identify and address issues that affect the protection of children. The EO states that "environmental health risks and safety risks mean risks to health or to safety that are attributable to products or substances that the child is likely to come in contact with or ingest (such as the air we breathe, the food we eat, the water we drink or use for recreation, the soil we live on, and the products we use or are exposed to)." Higher concentrations of children occur in schools, community child care facilities, and hospitals than in residential areas. The facilities that have the potential to be impacted by activities in the test areas at Eglin are shown in Figure 3-8.

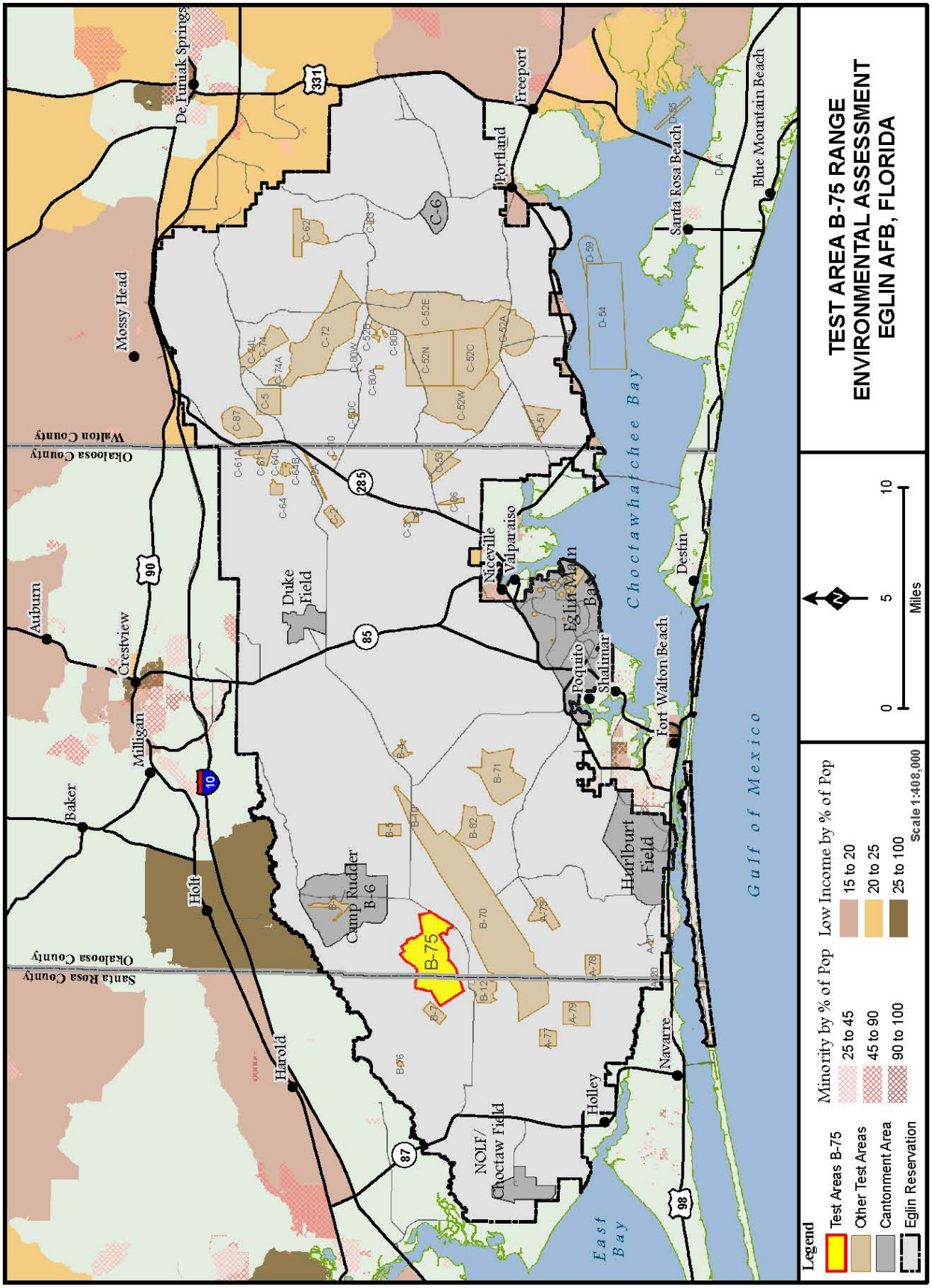

Figure 3-7. Communities with High Minority and Low-Income Populations

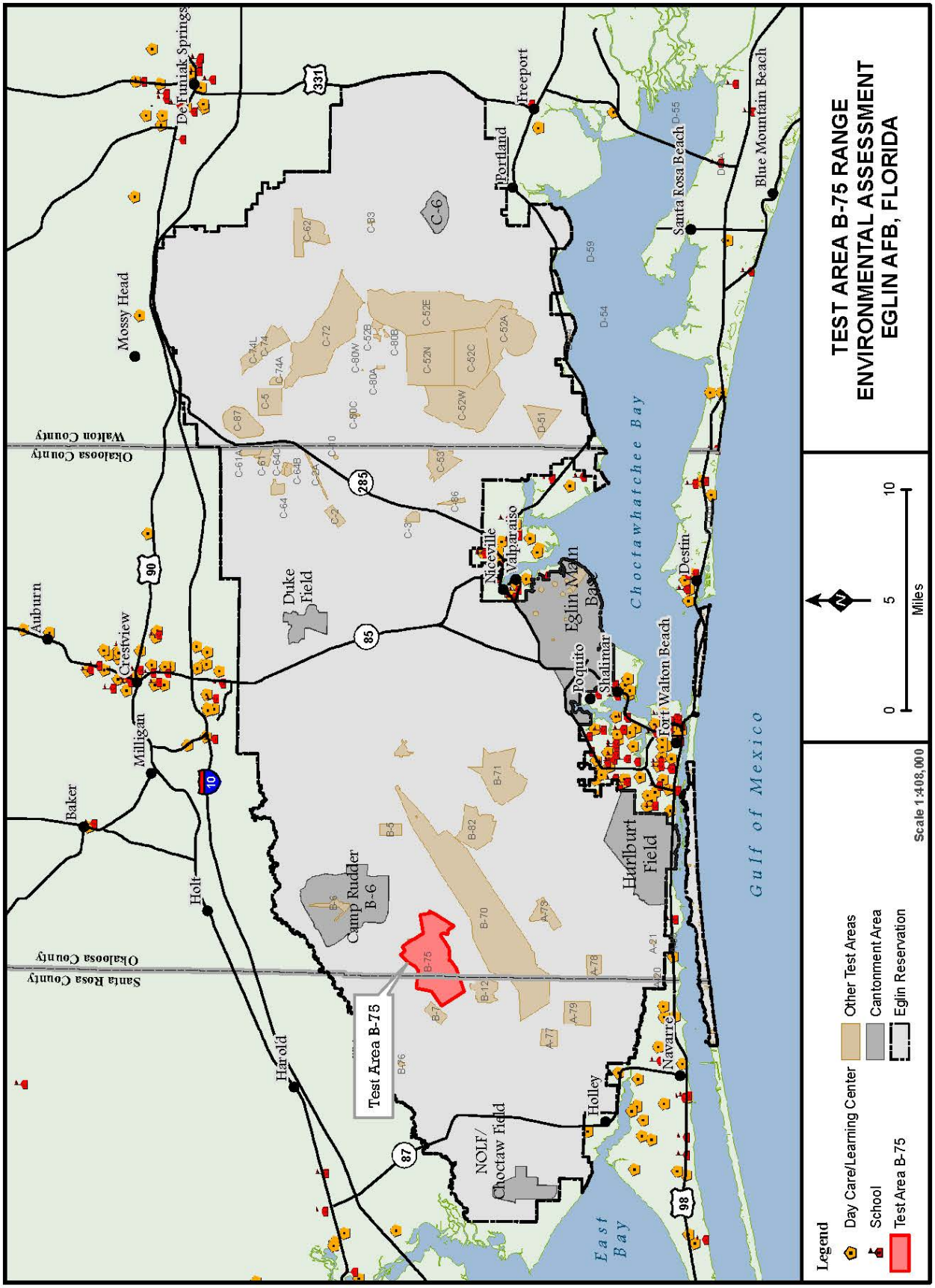

Figure 3-8. Communities with a High Percentage of Children Under 18

3.10.3 Noise Complaints

People and physical structures that are potentially susceptible to noise effects from the activities conducted at TA B-75 are in communities surrounding the Eglin Reservation. In the past, the majority of noise complaints from military activities at Eglin AFB have generally come from Navarre. In recent years a larger proportion of noise complaints have come from the city of Niceville. Table 3-13 shows the total number of complaints per city in 2008 and the actual number of complainants, and Table 3-14 provides examples of noise complaints received during 2008 from activities performed on the Eglin Complex.

Table 3-13. 2008 Noise Complainant Data per City

City	Total Number of Complaints	Total Number of Complainants
Crestview	2	2
DeFuniak Springs	6	5
Destin	2	2
Eglin	1	1
Freeport	1	1
Fort Walton Beach	2	1
Laurel Hill	1	1
Mary Esther	2	1
Milton	2	2
Miramar Beach	2	2
Navarre	2	2
Niceville	33	7
Pensacola	1	1
Santa Rosa Beach	3	3
Seagrove Beach	2	2
Shalimar	1	1
Valparaiso	1	1

Source: Walsh, 2009
Note: Noise complaint data listed is not attributed to any specific test area or activity.

Table 3-14. Eglin AFB 2008 Noise Complaint Data by City and Type of Complaint

Location	Complaint	Number of Complaints
Crestview	Low flying/noise	1
Crestview	Explosion	1
DeFuniak Springs	Low flying/noise	2
DeFuniak Springs	Explosion	2
DeFuniak Springs	Sonic boom	2
Destin	Explosion	2
Eglin	Noise	1
Freeport	Noise	1
Fort Walton Beach	Low flying/noise	2
Laurel Hill	Low flying/noise	1
Mary Esther	Explosion	2
Milton	Sonic boom	1
Milton	Explosion	1
Miramar Beach	Explosion	2
Navarre	Sonic boom	1

Table 3-14. Eglin AFB 2008 Noise Complaint Data by City and Type of Complaint, Cont'd

Location	Complaint	Number of Complaints
Navarre	Explosion	1
Niceville	Low flying/noise	22
Niceville	Explosion	7
Niceville	Sonic boom	4
Pensacola	Explosion	1
Santa Rosa Beach	Explosion	1
Santa Rosa Beach	Low flying/noise	1
Santa Rosa Beach	Sonic boom	1
Seagrove Beach	Explosion	1
Seagrove Beach	Sonic boom	1
Shalimar	Low flying/noise	1
Valparaiso	Explosion	1

Source: Walsh, 2009
Note: Noise complaint data listed is not attributed to any specific test area or activity.

4. ENVIRONMENTAL CONSEQUENCES

This chapter analyzes the potential impacts associated with TA B-75 test and training activities (described in Chapter 2) on the affected environment (described in Chapter 3). The analysis examines the potential impacts of each of the proposed alternatives on the following resource areas:

- Chemical Materials
- Soils
- Water Resources
- Biological Resources
- Cultural Resources
- Air Quality
- Noise
- Safety
- Socioeconomic Resources

4.1 CHEMICAL MATERIALS

The potential environmental impact of HM and waste were assessed as they pertain to debris from ground troop movement and chemical materials from ordnance for testing and training activities within TA B-75. Additionally, the transport, storage, use, and disposal of HM and waste associated with activities within TA B-75 should be coordinated with Eglin's 96th Civil Engineer Group/Environmental Compliance Branch, Pollution Prevention Section and disposed of appropriately according to regulations and AAC Plan 32-5, *Hazardous Waste Management Plan*. AAC Plan 32-9, *Hazardous Materials Management*, describes how Eglin AFB complies with federal, state, Air Force, and DoD laws and instructions. These materials would be stored in the proper containers, employing secondary containment as necessary to prevent/limit accidental spills. All spills and accidental discharges of petroleum products, HM, or HW would be reported.

Eglin AFB has developed emergency response procedures and site-specific contingency plans for all HM locations. Procedures and responsibilities for responding to a HM spill or other incidents are described in the Hazardous Waste Management Plan (U.S. Air Force, 2006a) and the Eglin AFB SPCC Plan (U.S. Air Force, 2005).

4.1.1 No Action Alternative

Debris

Debris, such as cartridges, shrapnel deposited from bombs and missiles, intact inert bombs, canisters from smokes, chaff, and flares, as well as litter and refuse from ground troop movement, may be deposited from test and training activities. If these items are left in place and

not properly disposed, packed out, or periodically cleared, the debris and refuse has the potential to cause adverse environmental impacts. AAC Plan 32-5 and AAC Plan 32-9 should be adhered to during training activities for recycling, HM management, and proper disposal of wastes.

Ordnance Use

HM/solid wastes, as they pertain to the analysis in this section, are the explosives and metals associated with the expenditure of ordnance on TA B-75. These materials may degrade the quality of soil or water, or may be toxic to plants, wildlife, or people. For the mission activities occurring on TA B-75, metals and explosives from bombs, missiles, guns, mines, small arms, smokes, chaff, and flares are the primary chemical materials of concern. Munitions and pyrotechnics use on TA B-75 has increased since the previous baseline, and in some cases has exceeded the levels authorized in the *2000 Test Area B-75 Programmatic Environmental Assessment* (U.S. Air Force, 2000). Under current practice, munition debris is recovered and/or removed from the ranges for the purpose of storage, reclamation, treatment, and disposal as solid waste. These practices are necessary for compliance with AFI 13-212, which requires the range to be cleared of munition debris on a regular basis.

Toxic Release Inventory-Data Delivery System

Quantification of chemical constituents in ordnance was determined using the TRI-Data Delivery System (TRI-DDS) (DoD, 2010). The TRI-DDS is a tool that is a product of the EPCRA Workgroup and is intended to provide a consistent method to assess chemical releases and waste management data across DoD. The EPCRA Workgroup supplies information for the DoD EPCRA TRI-reporting database for munition and range activities.

The TRI-DDS draws on both constituent information and emission factor data to determine the quantities of chemicals released from demilitarization (e.g., open-burn/open-detonation), live fire, and training activities. Calculations in the TRI-DDS begin with identifying and selecting or entering the specific munition item used. Munition items are identified in the TRI-DDS by DoD Identification Code, Navy Ammunition Logistics Code, National Stock Number, or common name-pick lists. The resulting TRI-DDS report lists the chemical constituents that comprise each munition item. These quantities are used to determine quantities of chemicals emitted. Because it is assumed that all munition debris, inert, and dudded munitions will be removed from the Range annually, this analysis addresses air emissions only from inert munitions and blanks. It is assumed that emissions to the air from detonation will not only enter the air environment, but will also have the potential to settle back onto the soil and possibly be transported by water.

Expenditures

TRI–DDS analysis included the chemical constituents in bombs, missiles, guns, mines, small arms, smokes, chaff, and flares used for testing and training within TA B-75. Numerous types of munitions are used on TA B-75; however, for the purposes of analysis, the items listed in the following table were used as surrogates, in some cases as representatives, and where constituent data was not available. Ordnance expenditures listed were provided by user groups, and maximum annual expendables for TA B-75 under the No Action Alternative are detailed in Chapter 2, Table 2-1. (Note: Potential impacts from chemical releases to specific media [i.e., soil, water, air, biological resources] are discussed in each of those respective sections.)

The DoD's TRI–DDS website was used to determine constituent chemical emissions from the discharge of these representative munitions on TA B-75. Expenditures were analyzed on an annual basis. Although 33 toxic chemical constituents are listed in the output of the various munitions, only those totaling greater than or equal to 1 pound annually are listed here, in Table 4-1. This includes the six insoluble chemicals, which would be the most persistent in the environment.

No new TRI reporting thresholds would be exceeded by munitions expenditures associated with the No Action Alternative.

Table 4-1. Munition-Related Residue Under No Action Alternative

Chemical	Quantity Released on TA B-75 (pounds)
Antimony	3
Barium	5
Hydrochloric acid	67
Lead	5

Source: DoD, 2010

4.1.2 Alternative 1

Debris

Under Alternative 1, training activities occurring at TA B-75 would increase significantly over the currently approved levels under the No Action Alternative. However, there would be no new types of training or expenditures and no new user groups. Management practices are in place that assure training areas will be scanned for debris and dudded munitions and that they would be removed. Any dudded munitions or UXO would be flagged and removed according to standard procedures. Therefore, no impacts are expected due to debris associated with the training activities under Alternative 1.

Ordnance Use

Ordnance use would increase under Alternative 1. Ordnance expenditures were provided by user groups, and maximum annual expendables for TA B-75 under Alternatives 1 and 2 are detailed in Chapter 2 (Table 2-1). (Note: Potential impacts from chemical releases to specific media [i.e., soil, water, air, biological resources] are discussed in each of those respective sections.)

The same methodology used for Table 4-2 was used to determine the chemical emissions associated with ordnance expenditure as a result of testing and training on TA B-75. Table 4-2 shows that the chemical output under Alternative 1 would be higher than under the No Action Alternative, especially for lead. It was calculated that the chemical load from all munitions would be distributed over 3,556 acres. Therefore, the overall concentration of any chemical at any given location would be minute. Additionally, because lead expenditures already require TRI reporting, no new TRI thresholds would be exceeded under Alternative 1.

Table 4-2. Munition-Related Residue Under Alternative 1

Chemical	Quantity Released on TA B-75 (pounds)
Antimony	25
Barium	39
Chlorine	1
Chromium	5
Hydrochloric acid	55
Lead	40

Source: DoD, 2010

4.1.3 Alternative 2

Debris

Under Alternative 2, testing and training activities occurring at TA B-75 would increase 300 percent over the levels analyzed under Alternative 1. However, management practices would remain in place that assure training areas will be scanned for debris and dudded munitions and that they would be removed. Any dudded munitions or UXO would be flagged and removed according to standard procedures.

Therefore, no impacts are expected due to debris associated with the training activities under Alternative 2.

Ordnance Use

Under Alternative 2, ordnance use would increase a great deal from the levels analyzed in Alternative 1. Ordnance expenditures were provided by user groups, and maximum annual expendables for TA B-75 under Alternatives 1 and 2 are detailed in Chapter 2 (Table 2-1). (Note: Potential impacts from chemical releases to specific media [i.e., soil, water, air, biological resources] are discussed in each of those respective sections.)

The same methodology was used to determine the chemical emissions associated with ordnance expenditure as a result of training and testing at TA B-75. Chemical emissions under Alternative 2 are shown in Table 4-3. Increases are approximately threefold over Alternative 1. Again, since these emissions are shown on an annual basis and the affected area is so large, the concentration at any time at any given location would be insignificant. No new TRI thresholds would be exceeded under Alternative 2.

Table 4-3. Munition-Related Residue Under Alternative 2

Chemical	Quantity Released on TA B-75 (pounds)
Acetaldehyde	1
Ammonia	1
Antimony	100
Barium	157
Benzene	1
Chlorine	3
Chromium	20
Ethylene	1
Formaldehyde	1
Hydrazine	1
Hydrochloric acid	219
Hydrogen cyanide	1
Hydrogen fluoride	1
Lead	161
Nitric acid	1
Ozone	1
Propylene	1
Toluene	2

Source: DoD, 2010

4.2 SOILS

Testing and training activities on TA B-75 may affect soils by deposition of munition residue and erosion. Potential munition impacts to soils pertain to substances that can be released into the ground as a result of mission activities. Examples of such substances include lead and copper. Chemical substances absorbed into the soil may eventually be released into groundwater and surface waters. Under current practice, munition debris is recovered and/or removed from the ranges for the purpose of storage, reclamation, treatment, and disposal as solid waste. These practices are necessary for compliance with AFI 13-212, which requires the range to be cleared of munition debris on a regular basis. Munition use, including bomb and small arms expenditures and associated ordnance retrieval, may initiate or accelerate erosion in sloped areas with reduced vegetative cover. The Best Management Practices (BMPs) listed later in this chapter can substantially decrease erosion and chemical impacts to soils on TA B-75.

4.2.1 No Action Alternative

Munitions Residue

Potential impacts associated with munitions residue pertain to chemical materials that can be released into the ground as a result of mission activities. Degradation of ordnance materials may produce chemical by-products that, under certain concentrations, may become an environmental concern. Once chemical substances are absorbed into the soils, they may be subsequently transported to groundwater and surface waters, and therefore have the potential to affect water quality. The purpose of this analysis is to identify chemical materials generated by mission expenditures and assess the relationship between potential chemical material concentrations and environmental thresholds. Soil-deposited projectiles are the focus of this analysis.

Many of the metal and organic chemical material by-products deposited on the surface following the execution of mission activities on TA B-75 naturally occur in the environment at relatively low concentrations and are important to overall ecosystem function. However, there is the potential for mission by-products to accumulate in the soil at concentrations that may adversely impact biological receptors. For example, lead is a component of some types of explosive material and is of particular concern because, unlike organic materials, it is not easily destroyed and can be toxic to plants and animals.

When metals are introduced to the soil surface, downward transport does not occur to a great extent unless the metal retention capacity of the soil is overloaded or metal interaction with the associated organic waste matrix enhances mobility. Ultimately, the extent of vertical migration is primarily related to the soil solution and surface chemistry of the soil matrix. Metal by-products deposited on or within the soil during TA B-75 mission events could exist on one or all of the following conditions:

- Dissolved in the soil solution
- Occupy exchange sites on inorganic soil constituents
- Specifically adsorbed on inorganic soil constituents
- Associated with insoluble soil organic matter
- Precipitated as pure or mixed solids
- Present in the structure of secondary minerals
- Present in the structure of primary mineral

Metal immobilization prevents leaching into groundwater systems by mechanisms of adsorption and precipitation. Metal adsorption by soil is related to properties of both the metal and the soil, such as clay content, organic content, texture, permeability, pH, particle size, surface area, ion exchange capacity, water content, and temperature. The soil components that are most associated with immobilization of metals are clay, iron oxides, and organic matter. The soil particle surface characteristics thought to be most important to adsorption are surface area and cation exchange capacity (CEC). Immobilized metals in surface soils that are prevented from entering groundwater can be readily transported to receiving waterways by soil erosion.

The USEPA Region III has developed risk-based criteria (RBC) for over 500 chemical compounds. The primary purpose of the RBC is for screening chemicals during risk assessments. Risk is defined as the expected frequency or probability of undesirable effects resulting from exposure to chemical stressors that could induce an adverse response in biological receptors. Pollutants in the soil may accumulate over time and persist for extended periods. RBC concentrations developed for residential soil are used in this analysis.

The *2000 Test Area B-75 Final Programmatic Environmental Assessment* (U.S. Air Force, 2000) identified small arms training as the mission category that could result in the greatest deposition of chemical materials into the soil of TA B-75, and is analyzed as a potential indicator of soil impacts. Small arms training is conducted at numerous locations on the test area. The 2000 PEA, for which the Preferred Alternative serves as the baseline of this document, analyzed 7.62-mm munitions for chemical constituents potentially transmitted to the soil.

The brass (70 percent copper and 30 percent zinc) cartridge case of a 7.62-mm round encapsulates the propellant charge and supports the bullet projectile. Projectile cartridge types include ball bullets, tracers, and incendiary bullets. The bullet projectile consists of two parts: a copper alloy clad steel metal jacket and a lead alloy core. The core of the ball is composed of a short steel forward section and a larger lead/antimony rear section. The metal jacket around the core is normally composed of brass (copper and zinc) or a ductile grade of malleable steel covered with a thin coating of copper.

Based on the constituents in the 7.62-mm M80 ammunition evaluated in the 2000 PEA, approximately 800 lbs of copper (160 lbs per berm), and 1,408 lbs of lead (282 lbs per berm) were deposited in the soils at target berms throughout the test area annually. There was considered to be no impact to soils from the copper and zinc in the bullet casings because the cases are typically removed from the site after missions are completed. To determine if lead and other contaminants were present in soils around the targets, soils from representative berms were tested for metals and other soil parameters. Results showed that the concentrations of copper, iron, zinc, aluminum, chromium, and lead were generally well below the Eglin background and USEPA risk-based concentrations, with no exceedances identified (Table 4-4). The highest surface and subsurface soil concentrations for copper and lead were detected at the B-5 target site on Holley Creek.

Table 4-4. Metal Concentrations in Soils from TA B-75 Target Berms, 2000 (mg/kg)

Soil Stratum	Copper	Iron	Zinc	Aluminum	Chromium	Lead
Target Berm B-2						
Surface	0.30	9.78	0.34	45.18	0.00	0.11
Subsurface	0.07	13.28	0.48	91.43	0.05	0.11
Target Berm B-3						
Surface	0.49	18.39	0.22	124.02	0.07	1.00
Subsurface	0.00	19.71	0.23	101.13	0.08	0.45
Target Berm B-5						
Surface	3.20	15.04	1.11	76.55	0.10	9.90
Subsurface	0.70	19.71	0.56	92.55	0.00	2.92
Eglin Soil Background Concentrations						
Surface (average)	0.15-90 (4.42)	51-10,700 (2,001)	0.79-376 (17.71)	63-26,500 (2,889)	0.35-25.9 (3.58)	0.78-340 (19.82)
Subsurface (average)	0.22-100 (2.68)	31-10,000 (1,472)	0.63-62 (4.17)	25-15,000 (2,378)	0.53-27 (2.22)	0.49-1,100 (23.44)
USEPA Region III Noncarcinogenic Effect Risk-Based Soil Residential Use Concentrations						
	3,100	23,000	23,000	78,000	120,000	-

Source: U.S. Air Force, 2000

The high usage of the berm target sites, coupled with the relatively low concentrations of lead and copper in the soil samples, suggests that either the metals may become soluble in soil and migrate downward, or they are locked up in target berms as intact slugs. Lead and copper are generally stable in the environment, but under certain soil and climate conditions they can break down and become soluble in the soil. Once soluble, they become mobile and can be transported to groundwater. The availability of lead and copper is partly dependent on their rate of

degradation in the soil. The rate of degradation, which is primarily regulated by soil chemistry and climate, ranges from a few years to hundreds of years.

Based on the soil analysis provided in U.S. Air Force (2000), copper and lead from small arms ammunition projectiles could degrade over time, leach into the Surficial Aquifer system, and flow laterally along groundwater gradients towards Holley and Wolf Creeks. The very strongly acidic soils (pH of 4.5 to 5.0) of the target berms promote corrosion and oxidative weathering of metal surfaces. Copper and lead solubility in the soil also increases at such low pH values. In addition, the test berm soils had a low CEC, meaning that metal ions are less likely to bind to soil particles. Finally, Lakeland soils have a high water infiltration rate, which would move dissolved metals toward groundwater. Nevertheless, the Eglin Installation Restoration Program has determined that lead generally exhibits limited vertical migration when deposited in the soil (U.S. Air Force, 2000). Based on this data, it was theorized that lead degrades slowly in the Eglin soil environment and generally does not manifest itself in the soil or groundwater, particularly with increased distance from the point of origin.

Similarly, ground test bomb detonations and EOD operations were analyzed for residual metal constituents. The types of ordnance expended during EOD operations included live and inert bombs, C-4, demolition charges, Shallow Water Assault Breaching (SABRE) charges, detonation cord, mines, fuses, igniters, and ground burst simulators. Aluminum, barium, and copper were found to be the primary constituents of concern. Estimated cumulative concentrations over a 3-year period at Training Target (TT) 18 were determined to be less than typical background concentrations for the soils on Eglin AFB and USEPA risk-based concentrations (Table 4-5).

Table 4-5. Estimated Concentration of By-products on TT-18 During FY 1995–1997

Element	Total Soil Surface Deposition (lbs)	Total Soil Concentration (mg/kg)	USEPA Region III Risk-Based Concentrations (mg/kg)	Phytotoxicity Thresholds (mg/kg)[1]
Aluminum	182	2.7	78,000	10
Barium	5	0.1	5,500	500
Copper	37	0.6	3,100	40

Source: U.S. Air Force, 2000
Mg = milligram; kg = kilogram; lbs = pounds
1. Bioavailable concentration that resulted in a 20-percent reduction in plant growth or yield.

In summary, tests of small arms target berm soil samples exposed to munitions expenditure levels associated with the No Action Alternative showed that metal concentrations were generally well below the Eglin background and USEPA risk-based concentrations. The absence of target-specific expenditure accounting and results of soil testing suggest probable mass flow balance data gaps that preclude a definitive conclusion regarding metal migration into groundwater. Based on the small arms baseline expenditures and soil sampling data, it is estimated that the copper and lead fired into target berms would degrade over time, become soluble in the soil solution, and migrate along groundwater gradients of the Surficial Aquifer system toward Holley and Wolf Creeks. However, based on groundwater and soil studies of lead-contaminated sites on Eglin, the Installation Restoration Program has determined that lead generally exhibits limited vertical migration in the soil. It is theorized that lead degrades slowly

in the Eglin soil environment and generally does not manifest itself in the soil or groundwater with increased distance from the point of origin.

Soil Erosion

Soil erosion is the process of detachment, suspension, translocation, and deposition of surface materials by water, wind, ice, or gravity. The rate of erosion in a given area can be accelerated by human activities. Erosion can introduce sediments and pollutants into terrestrial and aquatic environments, damage or destroy cultural resources, reduce recreation use and value of affected watersheds, and increase land management and operating costs. Eroded soil particles moved and deposited by a watercourse, which are known as sediment, can adversely alter water quality, habitats, and the hydrologic form and function of waterways and wetlands. Suspended sediment in waterways inhibits light penetration and photosynthesis and diminishes the aesthetic value of water bodies. Sediment deposition in waterways leads to premature filling of water bodies, exertion of large oxygen demands on the water, burial of benthic organism aquatic habitats, and alteration of stream hydrology. Sediment deposition on other terrestrial systems can bury and kill vegetation and other organisms. Erosion and sedimentation can also introduce organic matter and nutrients, pesticides, metals, and other compounds into receiving ecosystems.

Erosion on TA B-75 that facilitates the transport of soil materials and other compounds beyond the boundaries of the test area is considered nonpoint source pollution. The CWA as amended in 1987, Section 319, placed special importance on the need to control nonpoint source pollution. The CWA states that nothing can be introduced into a stream or other water body which could potentially pollute the water, and that programs for the control of nonpoint sources of pollution be developed and implemented in an expeditious manner so as to enable the achievement of the nonpoint source goals of the CWA. AFI 32-7041, Water Quality Compliance (Appendix A), stipulates that the Air Force maintain compliance with the CWA and other federal, local, and state environmental and water quality directives. In adherence to the DoD proactive approach to minimizing and mitigating adverse environmental effects, it is prudent to address the extent and potential impacts associated with accelerated erosion on TA B-75.

Slopes along the northern and southern boundaries of TA B-75, where riparian zones lie, are naturally in a continual state of erosion. Accelerated (human-induced) erosion by overland water flow may transport sediment to Holley and Wolf Creeks. Natural erosion rates have been accelerated by the extent and frequency of surface disturbances associated with mechanical vegetation control (roller drum chopping and bushhogging) and, to a lesser extent, military mission activities associated with the No Action Alternative. The areas where drum chopping has been excluded include the wetland interior in the northeast section of the test area, target surfaces, small arms target berms, and the ALARNG quadrant tank gun target area. Drum chopping is restricted in the ALARNG quadrant because of the subsurface network of electrical cables. The accelerated erosion process on TA B-75 has resulted in a change to the physical and chemical nature of the Lakeland soils, reduced vegetative cover, altered the length and gradient of slopes, and facilitated the nonpoint source pollution of streams.

The landscape features on TA B-75 most prone to soil erosion are the slopes, which have become steeper and shorter as a consequence of long-term soil loss. Generally, as the percent of the slope increases, the length of the slope decreases and the forces of gravity increase the water

erosion potentials. Severe erosion is occurring on the side slopes of some Lakeland soils, main interior roads, and watershed areas that outfall into adjacent streams. However, the extent of soil erosion is not simply a matter of slope gradient; variables of surface disturbance, vegetative cover, run-off, soil structure, and other features collectively have a direct bearing on soil movement. On TA B-75, slopes of 2 percent and 3 percent have been found to erode at appreciable rates (U.S. Air Force, 2000). The vegetative cover of slope areas has been substantially reduced in some areas as a result of vegetation management practices.

Based on the evaluation of soil characteristics, contours, landscape positions, drainage patterns, vegetative cover, and vegetation management practices, the slopes on TA B-75 are generally considered to have low resistance to erosion forces. Slopes with gradients of 3 to 9 percent are of greatest environmental concern. Figure 4-1 shows the areas most sensitive to erosion, with adjacent streams receiving most of the sediment. Modeling used to delineate these areas is described in the *2000 Test Area B-75 PEA* (U.S. Air Force, 2000). The vulnerable slope areas on TA B-75 were divided into riparian units and basin units to generally reflect the destination of sediment. The riparian units tend to deposit sediment into streams outside of the test area, while basin units tend to deposit sediment in the basin areas between slopes on the test area. Erosion rates within these sensitive areas were found to be substantially greater than rates in undisturbed areas.

The major activities that could contribute to erosion on TA B-75 include Air-to-Surface Bomb Delivery Training, Air-to-Surface Gunnery Operations, and Surface-to-Surface Small Arms Training (Figure 4-1). In addition to soil disturbance caused by the munitions, erosion could also result from vehicle and foot traffic associated with ordnance retrieval and ground training activities. Under the No Action Alternative, nearly 1,300 inert bombs could be expended annually on TA B-75. The majority (77 percent) would be bomb dummy unit (BDU) -33 bombs. BDU-33 expenditures have occurred primarily at TT-7 in the past, although TT-8 has been used as well. This level of activity could contribute to increased erosion at the site. The slopes adjacent to the target range from 10 to 30percent and are relatively sparsely vegetated due to mechanical vegetation control practices. Localized soil erosion would primarily be deposited on interslope terraces and in the receiving drains and depressions of the basin area to the south of TT-7. Increased soil deposition could also bury vegetation, which could further reduce the overall vegetative cover of the area. TT-18 is located near a sensitive slope area as well, and activities at this site could affect erosion rates.

Air-to-Surface gunnery activities involve expenditure of 7.62-mm and .50-caliber munitions. Small arms training consists of firing .50-caliber, 7.62-mm, and/or 5.56-mm munitions against established target arrays. Under the No Action Alternative, over 468,000 of these projectiles could be expended annually at various target locations. Although the impact of individual small arms projectiles is much less than that of a single bomb, the overall total number of expenditures creates the potential for soil erosion. In addition, spent small arms munitions have moved with eroded sediments in the past from target berms into basin areas.

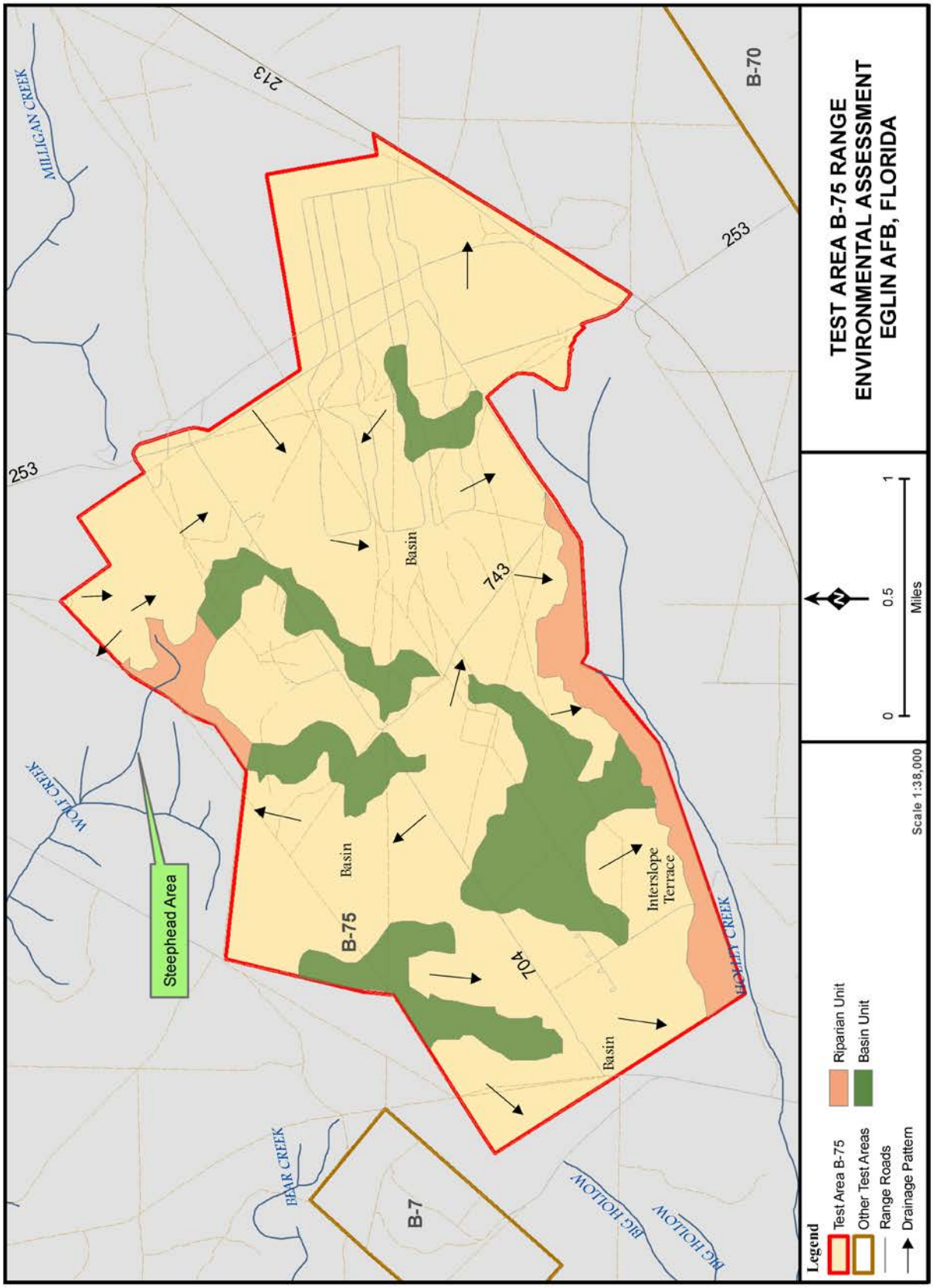

Figure 4-1. TA B-75 Regions of High Erosion Potential

Management Requirements

The preceding analyses describe potential soil impacts on TA B-75 resulting from deposition of munition residues and erosion. Although munition use may affect soil quality by introducing metal residues, the resulting concentrations are not likely to approach USEPA risk-based thresholds. Munitions expenditures, particularly Air-to-Surface Bomb Delivery Training, Air-to-Surface Gunnery Operations, and Surface-to-Surface Small Arms Training, could contribute to increased soil erosion. The severity of these potential impacts could be diminished by implementing management requirements identified in the 2000 TA B-75 PEA and the 2007 TA B-75 Environmental Baseline Document (EBD). A comprehensive list of management requirements related to soil quality is provided in Section 2.5, including general requirements and those specific to soils. The most pertinent actions, which would decrease impacts to soil quality, are summarized as follows:

- Increase vegetation cover when feasible, especially on unstable slopes, and minimize vegetation disturbance.
- Avoid disturbing unstable slopes and reduce gradients on eroding slopes to the degree feasible.
- Lime acidic soils to obtain a pH between 6.5 and 7 and add compost or incorporate clay materials to minimize the mobility and availability of metals in the soil.
- Employ bullet containment, lead projectiles management, and lead reclamation to reduce lead concentrations.
- Conduct groundwater quality sampling as necessary near any open detonation pit.
- During ground training, avoid ground-disturbing activities within 100 feet of streams and wetlands.

4.2.2 Alternative 1

Munitions Residue

Under Alternative 1, 7.62-mm small arms expenditures would increase to a maximum of approximately 861,466 rounds annually. This number is based on the assumptions that all 7.62-mm rounds not specifically identified as blanks in the Range Utilization Report (RUR) data are live rounds fired into target berms, and that both testing and training missions would increase at an equal rate. The resulting quantity of principal metals would be 6,340 lbs of copper and 11,156 lbs of lead distributed throughout the test range. Assuming that training activities are evenly spread between five major target berm locations, as presented in the No Action Alternative, 1,268 lbs of copper and 2,231 lbs of lead would be deposited annually on each site.

These quantities represent an approximately eightfold increase over quantities described in the No Action Alternative. However, this increase is not likely to cause metal concentrations in the soil to approach USEPA risk-based concentrations. Given the apparent slow degradation rate of metals in Eglin soils and limited vertical migration, as evidenced by low concentrations in heavily used areas, an eightfold increase in metal deposition would be unlikely to result in a corresponding eightfold increase in metal residue concentration. Even if such a scenario were to occur, the soil concentrations would not be expected to approach USEPA thresholds because

they are currently orders of magnitude below the USEPA standards. For example, the USEPA copper concentration threshold was found to range from 969 to 44,000 times the concentrations measured in soils at frequently used target areas on TA B-75 (Table 4-5). Adherence to the management practices identified under the No Action Alternative would reduce potential impacts due to munitions residue.

Soil Erosion

Potential soil erosion under Alternative 1 would result from the types of activities and in the general locations described under the No Action Alternative. The total number of inert bombs expended would decrease to approximately 1,000. The majority (58 percent) would be BDU-33 bombs, and most would be used at TT-7. Although the total number of bombs is less than that associated with the No Action Alternative, the activities could contribute to increased erosion at TT-7 as well as other locations where bombs are used, such as TT-8. The total number of small arms munitions expended, including .50-caliber, 7.62-mm, and 5.56-mm rounds, could approach 3 million annually under Alternative 1. These munitions would be used at a number of different target locations in the test area and, although individually impacting soil conditions to a negligible degree, in total could contribute to erosion potential on sparsely vegetated slopes. Ground training activities occurring on the test area could also contribute to erosion. Adherence to the management practices identified under the No Action Alternative would reduce the potential for erosion.

4.2.3 Alternative 2

Munitions Residue

Under Alternative 2, 7.62-mm small arms expenditures would substantially increase, to a maximum of approximately 3,445,864 rounds annually. This number is based on the assumptions that all 7.62-mm rounds not specifically identified as blanks in the RUR data are live rounds fired into target berms, and that all testing and training missions would increase at an equal rate. The resulting quantity of principal metals would be 25,362 lbs of copper and 44,624 lbs of lead distributed throughout the test range. Assuming that training activities are evenly spread between five major target berm locations, as presented in the No Action Alternative, 5,072 lbs of copper and 8,925 lbs of lead would be deposited annually on each site.

These quantities represent approximately 32 times the quantities described in the No Action Alternative. However, this increase would not necessarily cause metal concentrations in the soil to approach USEPA risk-based concentrations. Given the apparent slow degradation rate of metals in Eglin soils and limited vertical migration, as evidenced by low concentrations in heavily used areas, a 32-fold increase in metal deposition would be unlikely to result in a corresponding 32-fold increase in metal residue concentration. Even if such a scenario were to occur, the soil concentrations would not be expected to approach USEPA thresholds because of the current levels compared to USEPA standards. For example, the USEPA copper concentration threshold was found to range from 969 to 44,000 times the concentrations measured in soils at frequently used target areas on TA B-75 (Table 4-5). Adherence to the management practices identified under the No Action Alternative would reduce potential impacts due to munition residue.

Soil Erosion

Potential soil erosion under Alternative 2 would result from the types of activities and in the general locations described under the No Action Alternative. Under Alternative 2, nearly 4,000 inert bombs could be expended annually on TA B-75, which represents a 300-percent increase over Alternative 1. The majority (57 percent) would be BDU-33 bombs. This increase in bomb deliverables could increase surface disturbance to a level that increases soil erosion potential. The total number of small arms munitions expended, including .50-caliber, 7.62-mm, and 5.56-mm rounds, could potentially represent a 300-percent increase over the levels expended under Alternative 1. These munitions would be used at various target locations in the test area and, although individually impacting soil conditions to a negligible degree, in total could contribute to erosion potential on sparsely vegetated slopes. Ground training activities occurring on the test area could also contribute to erosion. Adherence to the management practices identified under the No Action Alternative would reduce the potential for erosion.

4.3 WATER RESOURCES

Water quality analysis focuses on the potential for chemical material by-products to enter Wolf and Holley Creeks that border the test area, and the wetland system located in the northeastern portion of the test area. Potential contaminant transport mechanisms include surface run-off and groundwater recharge. In general, the climate and physical and chemical characteristics of the dominant Lakeland soils of TA B-75 make the soil prone to relatively rapid contaminant infiltration and leaching into groundwater. Once in the groundwater, contaminants may flow along subsurface gradients toward stream outflows. Depending on mission logistics and physiological variables, the time required for infiltration into the soil and outflow into adjacent streams may range from weeks to years. However, sediments containing chemical materials may enter the stream directly during rainfall with little or no lag time between surface deposition and stream contamination.

Previous environmental analysis of TA B-75 missions (U.S. Air Force, 2000; U.S. Air Force, 2007) identified potential leaching of metals derived from small arms munitions into groundwater as the primary water resource issue. Lead, copper, aluminum, barium, and zinc are considered materials of concern on the test area. Erosion caused by Air-to-Surface bombing and ground test bomb detonations is also a potential issue. The No Action Alternative (Section 4.3.1) represents the baseline level of activity identified in these documents.

The susceptibility of water resources to contamination by soluble metals is partly dependent on the distance between the water and contamination source. Studies of surface water lead transport at a public shooting range in Virginia, discussed in U.S. Air Force (2000), found that some surface water samples at the range had lead concentrations comparable to that of natural water, while other samples had values 50 to 100 times the median concentration for natural waters. The highest lead concentrations were found in samples closest to the shooting backstop. It was concluded that the higher concentrations near the backstop were a result of rapidly corroding lead bullets deposited at a rate of between 1 and 3 million rounds per year.

4.3.1 No Action Alternative

Groundwater

Munition residue could migrate into the groundwater of TA B-75 in levels that could be of environmental concern, particularly if metals or other substances contaminate water wells. Based on subsurface water flows (in addition to surface water flow), Holley and Wolf Creeks were considered to be at risk of contamination if lead or other metals are transported in the subsurface water column (U.S. Air Force, 2000). However, the occurrence or extent of groundwater contamination is currently unknown. No groundwater monitoring wells are located on the test area, and no water well sampling or analysis for potential contamination has been performed on any water wells in proximity to TA B-75. Groundwater quality at TA B-75 is not anticipated to be negatively affected by the proposed activities. Soil concentrations of metal contaminants are not expected to approach USEPA risk-based thresholds, as described in Section 4.2.1. With implementation of water quality management requirements, identified in Section 2.5, the potential for contamination would be greatly reduced.

Surface Water

The proximity of small arms target berms to Holley Creek was identified as a potential water resource concern in U.S. Air Force (2000). At that time, two target berms were located on sensitive riparian slopes susceptible to erosion. However, more recently provided information (U.S. Air Force, 2007a) shows that target berms no longer remain in these locations. If berms are located near surface waters in the future, metals (particularly lead) dissolved in the soil solution may enter the streams by seepage and spring sapping recharge, or could be transported by surface erosion.

The presence and concentration of metals in surface waters on and near TA B-75 is unknown. Surface water sampling and analysis for potential contamination has not been conducted. However, the distance between testing sites at TA B-75 and the perennial streams systems (Bear, Holley, Big Hallow, Wolf, and Milligan Creeks) adjacent to the test area is fairly large. In the case of lead, the risk to surface waters is assumed to be minimal if the source is more than 0.25 mile away (USFWS, 2008). According to target locations provided in U.S. Air Force (2007a), the primary targets are more than 0.25 mile from surface waters in and adjacent to TA B-75. The surrounding surface waters are therefore considered to be at minimal risk from groundwater-based transport of contaminants, particularly lead. The ground cover is likely to serve as a pollution filter, intercepting surface runoff before it reaches these surface waters and the associated wetlands and floodplains. Surface water quality at these surface waters is not anticipated to be negatively affected by run-off from TA B-75. With implementation of erosion control management requirements, identified in Section 2.5, the potential for sedimentation would be greatly reduced.

Wetlands

Approximately 12 acres of wetlands occur within the boundaries of TA B-75. In accordance with the CWA (USC 1344-Section 404) and AFI 32-7064, all activities proposed at TA B-75 would avoid direct and indirect impacts to wetland resources. Furthermore, implementation of specific wetland management requirements and water quality management requirements would greatly reduce the potential for impacts (U.S. Air Force, 2007a). A small arms firing range is

located south and down slope of the wetland area associated with Wolf Creek. This physical orientation minimizes the potential for impacts due to run-off and soil erosion. Since there are no sensitive slopes in proximity to the firing range, the risk of metals transport by soil erosion is minimized. Soil erosion that does occur will likely remain on TA B-75 and be limited to the immediate areas of deposition. No specific activities that could impact the wetland associated with Holley Pond are identified in the 2000 PEA or the 2007 EBD. Ground training activities occurring on the test area could contribute to erosion, which could impact wetlands. If ground training occurs, personnel should avoid ground-disturbing activities within 100 feet of wetlands.

Floodplains

Approximately 29 acres of floodplain resources (within the Federal Emergency Management Agency [FEMA] flood zone) associated with Wolf Creek and Holley Pond occur within the boundaries of TA B-75. Other sizable floodplains within the FEMA flood zone occur outside of the test area in association with the surrounding creeks adjacent to the test area. Impacts to floodplains would not be significant under the No Action Alternative. None of the actions on TA B-75 involve changes to the floodplain. Further, there are no habitable structures at risk from any changes to the floodplain. Ground training occurs within the floodplain but the activity would not alter flow regimes of 100-year floods.

Coastal Zone

Components of the Proposed Action would take place within the jurisdictional concerns of FDEP and therefore would require a consistency determination with respect to Florida's Coastal Zone Management Plan and the CZMA. Eglin AFB has prepared a CZMA determination to address the potential impacts to the coastal zone (Appendix F, *CZMA Consistency Determination*).

4.3.2 Alternative 1

Ground Water

Impacts to ground water would not be significant under Alternative 1. Analysis in Section 4.2.2 examined the potential for contaminants from expended items to migrate from the surface into groundwater and exceed USEPA standards for groundwater quality. Munition expenditure levels associated with this alternative are not expected to cause metal soil concentrations sufficient to approach USEPA risk-based thresholds. With implementation of the water quality management requirements identified in Section 2.5, the potential for groundwater contamination would be greatly reduced.

Surface Water

There would be no significant impacts to surface waters under Alternative 1. Mission activities have no mechanism for direct impacts to surface waters because there are no active targets near surface waters. Ground cover would likely serve as a pollution filter, intercepting surface runoff before it reaches these surface waters and the associated wetlands and floodplains. Soil erosion caused by bombing exercises could impact surface water quality by transporting metal residue from expended munitions. Erosion on TA B-75 is associated with sloped areas, but there is no evidence that these areas are impacting surface waters. Implementation of erosion control

management requirements, identified in Section 2.5, would greatly reduce the potential for erosion impacts.

Wetlands

There would be no significant impacts to the approximately 12 acres of wetland habitat occurring on TA B-75 under Alternative 1. In accordance with the CWA (USC 1344-Section 404) and AFI 32-7064, all activities proposed at TA B-75 would avoid direct and indirect impacts to wetland resources. Furthermore, implementation of specific wetland management requirements and water quality management requirements would greatly reduce the potential for impacts (U.S. Air Force, 2007a). A small arms firing range is located south and down slope of the wetland area associated with Wolf Creek. This physical orientation minimizes the potential for impacts due to runoff and soil erosion. The risk of metals transport by soil erosion is minimized by the lack of sloped areas in proximity to the firing range. Soil erosion that does occur will likely remain on TA B-75 and be limited to the immediate areas of deposition. No specific activities that could impact the wetland associated with Holley Pond are identified in the 2000 PEA or the 2007 EBD.

Floodplains

There would be no significant impacts to floodplains under Alternative 1. Floodplains within the boundaries of TA B-75 are associated with Wolf Creek and Holley Pond. Other sizable floodplains within the FEMA flood zone occur outside of the test area in association with the surrounding creeks adjacent to the test area. None of the actions on TA B-75 involve changes to the floodplain. Further, there are no habitable structures at risk from any changes to the floodplain. Ground training occurs within the floodplain but the activity would not alter flow regimes of 100-year floods.

Coastal Zone

Components of the Proposed Action would take place within the jurisdictional concerns of FDEP and therefore would require a consistency determination with respect to Florida's Coastal Zone Management Plan and the CZMA. Eglin AFB has prepared a CZMA determination to address the potential impacts to the coastal zone (Appendix F, *CZMA Consistency Determination*).

4.3.3 Alternative 2

Ground Water

Impacts to ground water would not be significant under Alternative 2. Analysis in Section 4.2.3 examined the potential for contaminants from expended items to migrate from the surface into groundwater and exceed USEPA standards for groundwater quality. Munition expenditure levels associated with this alternative are not expected to cause metal soil concentrations sufficient to exceed USEPA risk-based thresholds. With implementation of the water quality management requirements identified in Section 2.5, the potential for groundwater contamination would be greatly reduced.

Surface Water

There would be no significant impacts to surface waters under Alternative 2. Mission activities have no mechanism for direct impacts to surface waters because there are no active targets near surface waters. Ground cover would likely serve as a pollution filter, intercepting surface run-off before it reaches these surface waters and the associated wetlands and floodplains. Soil erosion caused by bombing exercises could impact surface water quality by transporting metal residue from expended munitions. Erosion on TA B-75 is associated with sloped areas, but there is no evidence that these areas are impacting surface waters. Implementation of erosion control management requirements, identified in Section 2.5, would greatly reduce the potential for erosion impacts.

Wetland

There would be no significant impacts to the approximately 12 acres of wetland habitat occurring on TA B-75 under Alternative 1. In accordance with the CWA (USC 1344-Section 404) and AFI 32-7064, all activities proposed at TA B-75 would avoid direct and indirect impacts to wetland resources. Furthermore, implementation of specific wetland management requirements and water quality management requirements would greatly reduce the potential for impacts (U.S. Air Force, 2007). A small arms firing range is located south and down slope of the wetland area associated with Wolf Creek. This physical orientation minimizes the potential for impacts due to run-off and soil erosion. The risk of metals transport by soil erosion is minimized by the lack of sloped areas in proximity to the firing range. Soil erosion that does occur will likely remain on TA B-75 and be limited to the immediate areas of deposition. No specific activities that could impact the wetland associated with Holley Pond are identified in the 2000 PEA or the 2007 EBD.

Floodplains

There would be no significant impacts to floodplains under Alternative 1. Floodplains within the boundaries of TA B-75 are associated with Wolf Creek and Holley Pond. Other sizable floodplains within the FEMA flood zone occur outside of the test area in association with the surrounding creeks adjacent to the test area. None of the actions on TA B-75 involve changes to the floodplain. Further, there are no habitable structures at risk from any changes to the floodplain. Ground training occurs within the floodplain but the activity would not alter flow regimes of 100-year floods.

Coastal Zone

Components of the Proposed Action would take place within the jurisdictional concerns of FDEP and therefore would require a consistency determination with respect to Florida's Coastal Zone Management Plan and the CZMA. Eglin AFB has prepared a CZMA determination to address the potential impacts to the coastal zone (Appendix F, *CZMA Consistency Determination*).

4.4 BIOLOGICAL RESOURCES

This section discusses potential impacts to biological resources from activities conducted at TA B-75 on Eglin AFB. To determine potential impacts, the locations of sensitive habitats and

species in relation to the Proposed Action were identified. Maps were examined to locate sensitive species and habitats, and site visits and additional surveys were conducted where necessary to confirm locations. Scientific literature was reviewed for studies that examined similar types of impacts to biological resources. The literature review included a review of basic characteristics and habitat requirements of each sensitive species. Where available, information was also gathered relative to management considerations, incompatible activities, and threats to each sensitive species. Impact analyses were then conducted based on the information gathered from the literature review and discussions with experts in these areas.

The federal- and/or state-listed wildlife species that have been identified as occurring within 1 km (0.62 mile) or potentially visiting TA B-75 include: RCW (*Picoides borealis*), Florida black bear (*Ursus americanus floridanus*), eastern indigo snake (*Drymarchon corais couperi*), gopher tortoise (*Gopherus polyphemus*), gopher frog (*Rana capito*), and the reticulated flatwoods salamander (*Ambystoma bishopi*). Environmental consequences to these species are evaluated in terms of the effects of mission activity on wildlife habitat utility, physical injury, nest flush response, and nesting success.

4.4.1 No Action Alternative

This alternative would continue the level of activity approved in the 2000 TA B-75 PEA. Potential impacts to biological resources would be the same, and are summarized in the following paragraphs. The 2000 PEA concluded that no significant impacts to biological resources would be expected for the activities analyzed. However, the eastern end of TA B-75 contains either confirmed or potential habitat for several species. Avoidance or diligent surveys of this area would help in minimizing potential impacts to biological resources.

Noise impacts to RCWs would not be significant. RCWs have demonstrated a degree of adaptability to the noise occurring on TA B-75. The most probable behavioral responses of RCWs in close proximity to TA B-75 would be a startle reflex and temporary nest flushing. Activities are not expected to adversely impact nesting success. No significant impacts are anticipated to other wildlife species.

The probability of gopher tortoise burrow collapse due to munition impact is considered low. Similarly, the likelihood of direct physical strike of sensitive wildlife species such as the gopher tortoise, eastern indigo snake, and gopher frog is considered remote. Release of chemical materials into the soils or air at TA B-75 would have no significant impacts on sensitive wildlife species such as the RCW, American kestrel, eastern indigo snake, and gopher tortoise.

4.4.2 Alternative 1

Alternative 1 would result in increased munition expenditures associated with ground training activities from several new user groups as discussed in Section 2.2.2. Although some risk of wildfire would result from increased munitions use, no direct impacts to sensitive species or habitats are anticipated from munitions. While fires are usually beneficial in restoring natural communities, it is unknown whether the wildfires potentially associated with Alternative 1 would have a net positive or negative effect on sensitive habitats on TA B-75. With any wildfire, there is the potential to burn down RCW cavity trees or to cause damage to flatwoods

salamander or gopher frog ponds due to fire control efforts. Adherence to the Wildfire Specific Action Guidelines for Eglin (which include restrictions during extreme fire danger) (U.S. Air Force, 2006b) would reduce the likelihood of a mission-induced wildfire and its potential negative impacts. Thus, mission activities are not likely to adversely affect the RCW or flatwoods salamander, and impacts to sensitive habitats from munition use would not be significant.

Red-Cockaded Woodpecker — In 2009, the base-wide RCW population consisted of 413 active clusters as compared to 321 in the previous 2005 TA B-75 EBD analysis. Despite the increase in base-wide populations, the number of active RCW trees located near the TA B-75 Complex remains consistent. Four active trees and associated forage habitat (487 acres) exist in the eastern portion of TA B-75. Numerous active trees and foraging habitat areas also are present within close proximity of TA B-75. Before any tree clearing, units must coordinate with Eglin Natural Resources. Training may temporarily disturb individuals or populations. Foraging RCWs may avoid areas where disturbance is occurring. Pioneering RCWs may be affected by noise from daily operations and not colonize or immigrate to new areas near the test site or access roads. This could affect the growth of the RCW population adjacent to the proposed activity area. However due to the historical use of missions on TA B-75 and RCW's current existence significant impacts are not expected.

Eglin follows the Management Guidelines for the RCW on Army Installations, which details activities that are allowed and those that are restricted a 200-foot buffer of active RCW trees (U.S. Army, 2006) (Table 4-6). RCW cavity trees are marked with one band of white paint. For most of the RCW clusters on Eglin, the 200-foot protection buffer is not marked in the field. However, units must still observe the restrictions within 200 feet of active RCW trees. Only transient foot traffic and vehicular traffic on established roads or trails are allowed within the 200-foot buffer.

Table 4-6. Training Activities Within RCW Buffer Zones[1]

Maneuver and Bivouac	**Allowed**
Hasty defense, light infantry, hands and tool digging only, no deeper than 2 feet, 2 hours maximum	Yes
Hasty defense, mechanized infantry/armor	No
Deliberate defense, light infantry	No
Deliberate defense, mechanized infantry/armor	No
Establish command post, light infantry	No
Establish command post, mechanized infantry/armor	No
Assembly area operations, light infantry/mechanized infantry/armor	No
Establish CS/CSS sites	No
Establish signal sites	No
Foot transit through the cluster	Yes
Wheeled vehicle transit through the cluster[2]	Yes
Armored vehicle transit through the cluster[2]	Yes
Cutting natural camouflage; hardwood only	Yes
Establish camouflage netting	No
Vehicle maintenance for no more than 2 hours	Yes
Weapons Firing	**Allowed**
7.62 mm and below blank firing	Yes
.50-caliber blank firing	Yes
Artillery firing point/position	No

Table 4-6. Training Activities Within RCW Buffer Zones[1], Cont'd

Maneuver and Bivouac	**Allowed**
MLRS firing position	No
All others	No
Noise	**Allowed**
Generators	No
Artillery/hand grenade simulators	Yes
Hoffman type devices	Yes
Pyrotechnics/Smoke	**Allowed**
CS/riot agents	No
Smoke, haze operations only, generators or pots, fog oil and/or graphite flakes[3]	Yes
Smoke grenades	Yes
Incendiary devices to include trip flares	Yes
Star clusters/parachute flares	Yes
HC smoke of any type	No
Digging	**Allowed**
Tank ditches	No
Deliberate individual fighting positions	No
Crew-served weapons fighting positions	No
Vehicle fighting positions	No
Other survivability/force protection positions	No
Vehicle survivability positions	No

MLRS= Multiple Launch Rocket System; CS/CSS = Combat Support/Combat Service Support

1. These training restrictions apply to RCW cavity trees in training areas but not to cavity trees located in dedicated impact areas.
2. Vehicles will not get any closer than 50 feet of a marked cavity tree unless on existing roads, trails, or firebreaks.
3. Smoke generators and smoke pots will not be set up within 200 feet of a marked cavity tree, but the smoke may drift through the 200-foot circle around a cavity tree.

Suitable habitat appears to outweigh any negative influences associated with noise (whether that is construction or military bombing). Observations have indicated that many animals become adapted to human activities and noises (Busnel, 1978). Scientists who have researched the effects of noise on wildlife report that animals may initially react with a startle effect from noises, but adapt over time, so that even this behavior is eradicated (Busnel, 1978). Based on the fact that the RCW population continues to grow at Eglin including areas in close proximity to test areas, it appears that they have adapted to all of the noises associated with military missions. Mission activities at B-75 are not likely to adversely affect the RCW.

Florida Black Bear — The Florida Black Bear may be found in the Sandhills, and also in stream riparian areas which they use as habitat and travel corridors. The presence of Wolf, Holley, Milligan, and Bear Creeks enhances the possibility of black bear potential. Because the majority of the test area is cleared, it is unlikely that bears would traverse the open area. Vehicle strikes are the primary concern for bears on Eglin, thus drivers should be alert to the presence of bears to avoid impacts. The Florida black bear is unlikely to be adversely impacted by activities under this alternative.

Gopher Tortoise — Two gopher tortoise burrows exist in the eastern end of the test area near Eglin Road 213, and there is the potential for gopher tortoises anywhere on the test area. Gopher tortoises also receive protection from noise and physical impact through their use of burrows. Potential for significant habitat alteration exists from munitions and training resulting in the collapse of gopher tortoise burrows. However, this potential is infrequent. Training and heavy

munition use should be avoided near any gopher tortoise burrows and if a gopher tortoise is sighted, activities should cease until the tortoise moves out of harm's way. In recent years, the 96 CEG/CEVSN has successfully relocated gopher tortoises as a form of mitigation to potential impacts. Transportation and release of tortoises would follow guidelines established by the FWC in *Gopher Tortoise Permitting Guidelines* (FWC, 2008). Before any land-clearing activities or establishment of new targets, Eglin Natural Resources Section (96 CEG/CEVSN) must be contacted to conduct a gopher tortoise survey.

If any tortoises were found, relocation to another area on Eglin would alleviate impacts. Thus, impacts to the gopher tortoise would not be significant under any of the alternatives.

Gopher Frog — One confirmed gopher frog pond exists in the eastern end of the test area near Eglin Road 213 and another is present just outside the eastern boundary. The decline of the gopher frog is linked to activities that disturb or degrade gopher tortoise burrow or wetland habitat. Gopher frogs do not exhibit a well-developed acoustic startle response and are often regarded as non-susceptible to noise impacts (USFWS, 1988). Restriction of ground-disturbing activities within 100 feet of the gopher frog ponds would avoid impacts.

Eastern Indigo Snake — The federally threatened eastern indigo snake may be present; however only two gopher tortoise burrows are present (which indigo snakes often use as refuges during the winter) on TA B-75 and habitat quality is generally poor. In coordination with the USFWS, as part of the eastern indigo snake recovery plan, Eglin has developed standard practices for forestry and other land-disturbing activities to minimize any potential impacts to this species. Such practices include providing project personnel with a description of the eastern indigo snake, its behaviors, and protection under federal law, and giving instructions not to injure, harm, or kill this species. The primary potential impact would be crushing by vehicles during daily operations. Practices that would reduce impacts include ceasing activities if an eastern indigo snake is sighted and allowing the snake to move away from the site before resuming activities, and avoiding disturbance to gopher tortoise burrows.

For any gopher tortoise burrows that were in imminent danger from munition testing or training, Eglin would follow the *Gopher Tortoise Permitting Guidelines* (FWC, 2008) for relocation of gopher tortoises and commensals (i.e., indigo snake). The indigo snake is not likely to be adversely affected, and impacts to the indigo snake would not be significant under Alternative 1.

Flatwoods Salamander — Flatwoods salamander potential habitat exists in the eastern end of the test area. It is extremely difficult to find adult salamanders or their larvae. Labor- and time-intensive studies would be required to sample all potential ponds, so Eglin looks at certain habitat characteristics to determine if there is a good potential for a salamander to be present. If such habitat is found, Eglin conservatively protects it in case there are salamanders present. Potential and confirmed habitats are treated with the same protection. To identify areas within the 464,000-acre Eglin reservation where Air Force activities would have the potential to impact flatwoods salamanders, the land cover data layer within the geographic information system (GIS) was queried to obtain all polygons with any potential to contain flatwoods salamander habitat. A 1,500-foot buffer was designated around potential habitat to protect pond-breeding flatwoods salamanders to match the *Draft Recovery Plan for the Flatwoods Salamander* (USFWS, 2005). Within this buffer, all vehicle traffic should remain on existing roads and no ground-disturbing

activities should occur. Mission activities at B-75 are not likely to adversely affect the flatwoods salamander and impacts would not be significant.

4.4.3 Alternative 2

Under Alternative 2, testing and training would increase in the area, as discussed in Section 2.2.3, leading to a slight increase in the area affected and intensity of noise. However, as discussed above, due to the existing environment and the availability of suitable habitat, sensitive species are not likely to be adversely affected, and impacts to biological resources would not be significant under this alternative.

4.5 CULTURAL RESOURCES

4.5.1 No Action Alternative

The No Action Alternative represents the previously approved level of activity at TA B-75 and would not adversely affect cultural resources. Should ground-disturbing activities beyond the currently approved mission occur, 96 CEG/CEVSH should be contacted to provide guidance to avoid direct physical impact to identified cultural resources or areas where the potential exists to encounter subsurface cultural resources.

Continued maintenance and upkeep of existing structures is required. If modification or demolition of facilities were to occur, the existing Cold War-era structures will require additional consideration. All actions must adhere to standards and guidelines outlines in the Eglin AFB Integrated Cultural Resources Management Plan (U.S. Air Force, 2004) and the previously developed Programmatic Agreement between the AAC, the Florida State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation (U.S. Air Force, 2003b).

Continued coordination should occur with 96 CEG/CEVSH prior to future proposed activities. In the event that unknown cultural resources are discovered during a mission activity, all activity in the immediate vicinity must cease until the Base Historic Preservation Officer and 96 CEG/CEVSH have been notified and a determination of significance has been rendered.

4.5.2 Alternative 1

Impacts to cultural resources would be identical to those proposed under the No Action Alternative. As described under the No Action Alternative, no adverse effects to cultural resources would be expected under the increase in activities under Alternative 1.

4.5.3 Alternative 2

As described under Alternative 1, no adverse effects to cultural resources would be expected under the increase in activities under Alternative 2.

4.6 AIR QUALITY

Air quality is evaluated using a 10-percent threshold of Okaloosa and Santa Rosa County emissions. Emissions are also compared to the NAAQS to verify air emissions are not exceeding federal levels. Air emissions were calculated based on a representative munition for each expenditure category (i.e., bombs, countermeasures, rockets, etc.) and the total quantity of expenditures expected for each alternative multiplied by the net explosive weight and the appropriate emission factors.

4.6.1 No Action Alternative

Under the No Action Alternative the baseline emissions represent the 100-percent increase in test missions and associated expendables over the baseline years captured in the FY 1995–1997 in the 2000 TA B-75 PEA (U.S. Air Force, 2000). Table 4-7 summarizes the munition emissions compared to the region of influence while Table 4-8 shows the emissions compared to the NAAQS. Emissions would be below the federal standards and the 10-percent threshold. No impacts to air quality are expected for the No Action Alternative.

Table 4-7. Munitions Emissions for the No Action Alternative Compared to Okaloosa and Santa Rosa Counties

	Emissions (tons/yr)				
	CO	**NO_x**	**PM**	**SO_x**	**VOC**
Total Okaloosa County	63,274	7,132	8,736	839	10,333
Total Santa Rosa County	53,052	11,095	14,308	3,012	8,519
Test Area Emissions	2.463	0.363	12.342	0.020	0.249
% Okaloosa County Emissions	0.002	0.003	0.071	0.001	0.001
% Santa Rosa County Emissions	0.002	0.002	0.043	0.000	0.001

CO = Carbon Monoxide; NO_x = Nitrogen Oxides; PM= Particulate Matter; SO_x = Sulfur Oxides; VOC= Volatile Organic Compound; tons/yr = tons per year

Table 4-8. Munition Emissions for the No Action Alternative Compared to the NAAQS

Criteria Pollutant	Averaging Time	NAAQS (ppm)	Calculated Concentration (ppm)
CO	1-hour	35	7.534E-07
	8-hour	9	5.274E-07
NO_x	Annual	0.053	1.541E-09
SO_2	3-hour	0.5	4.190E-09
	24-hour	0.14	1.862E-09
	Annual	0.03	3.724E-10
PM_{10}	24-hour	150 µg/m³	1.448E+00
	Annual	50 µg/m³	2.896E-01

CO = Carbon Monoxide; NO_x = Nitrogen Oxides; PM= Particulate Matter; SO_x = Sulfur Oxides; VOC= Volatile Organic Compound; ppm = Parts per Million; µg/m³ = Micrograms per Cubic Meter of Air

4.6.2 Alternative 1

This alternative would approve current and foreseeable future use of expenditures on TA B-75. The increase in expenditures would cause a slight increase in emissions to the air but would not

exceed federal standards (Table 4-10) or the 10-percent threshold (Table 4-9). Emissions would be minimal and would have no adverse effect on air quality for Alternative 1.

Table 4-9. Munition Emissions for the Alternative 1 Compared to Okaloosa and Santa Rosa Counties

	Emissions (tons/yr)				
	CO	**NO_x**	**PM**	**SO_x**	**VOC**
Total Okaloosa County	63,274	7,132	8,736	839	10,333
Total Santa Rosa County	53,052	11,095	14,308	3,012	8,519
Test Area Current Emissions	4.692	1.171	105.572	0.090	0.249
% Okaloosa County Emissions	0.004	0.008	0.604	0.005	0.001
% Santa Rosa County Emissions	0.004	0.005	0.369	0.001	0.001
Test Area Future Emissions	2.184	0.262	0.662	0.012	0.249
% Okaloosa County Emissions	0.002	0.002	0.004	0.001	0.001
% Santa Rosa County Emissions	0.002	0.001	0.002	0.000	0.001

CO = Carbon Monoxide; NO_x = Nitrogen Oxides; PM = Particulate Matter; SO_x = Sulfur Oxides; VOC = Volatile Organic Compound; tons/yr = Tons per Year

Table 4-10. Munition Emissions for the Alternative 1 Compared to the NAAQS

Criteria Pollutant	**Averaging Time**	**NAAQS (ppm)**	**Calculated Concentration (ppm)**	
			Current	**Future**
CO	1-hour	35	1.311E-06	6.836E-07
	8-hour	9	9.174E-07	4.785E-07
NO_x	Annual	0.053	3.382E-09	1.311E-09
SO_2	3-hour	0.5	1.101E-08	3.335E-09
	24-hour	0.14	4.893E-09	1.482E-09
	Annual	0.03	9.786E-10	2.964E-10
PM_{10}	24-hour	150 ug/m³	12.125	0.110
	Annual	50 ug/m³	2.425	0.022

CO = Carbon Monoxide; NO_x = Nitrogen Oxides; PM = Particulate Matter; SO_2 = Sulfur Dioxide; VOC = Volatile Organic Compound; ppm = Parts per Million; ug/m³ = Micrograms per Cubic Meter of Air

4.6.3 Alternative 2

This alternative would authorize the level of activity under Alternative 1 plus a 300-percent increase in mission activity. The increase in munition expenditures would cause an increase in air emissions to the region that would be minimal and temporary (Table 4-11 and Table 4-12). The pollutant that has the potential to emit the most is particulate matter. Under this alternative, emissions would consist of 2.4 percent and 1.5 percent of Okaloosa and Santa Rosa Counties respectively, which is well within the 10-percent threshold. Comparing these emissions to the NAAQS, particulate matter is calculated at 48 ug/m³ for a 24-hour period and 9 ug/m³ annually. Both calculated concentrations are below the NAAQS and thus air emissions would have no adverse impacts on air quality from Alternative 2 actions.

Table 4-11. Munition Emissions for the Alternative 2 Compared to Okaloosa and Santa Rosa Counties

	Emissions (tons/yr)				
	CO	**NO_x**	**PM**	**SO_x**	**VOC**
Total Okaloosa County	63,274	7,132	8,736	839	10,333
Total Santa Rosa County	53,052	11,095	14,308	3,012	8,519
Test Area Emissions	12.278	3.923	423.013	0.326	0.249
% Okaloosa County Emissions	0.010	0.027	2.421	0.019	0.001
% Santa Rosa County Emissions	0.012	0.018	1.478	0.005	0.001

CO = Carbon Monoxide; NO_x = Nitrogen Oxides; PM = Particulate Matter; SO_x = Sulfur Oxides; VOC = Volatile Organic Compound; tons/yr = tons per year

Table 4-12. Munition Emissions for Alternative 2 Compared to the NAAQS

Criteria Pollutant	Averaging Time	NAAQS (ppm)	Calculated Concentration (ppm)
CO	1-hour	35	3.209E-06
	8-hour	9	2.246E-06
NO_x	Annual	0.053	9.652E-09
SO_2	3-hour	0.5	3.424E-08
	24-hour	0.14	1.522E-08
	Annual	0.03	3.044E-09
PM_{10}	24-hour	150 ug/m³	48.500
	Annual	50 ug/m³	9.700

CO = Carbon Monoxide; NO_x = Nitrogen Oxides; PM = Particulate Matter; SO_2 = Sulfur Dioxide; PM_{10} = Particulate Matter with a Diameter Less Than or Equal to 10 Microns

4.7 NOISE

Generally individual noise events are expressed in decibels (dB), weighted to consider specific noise aspects. In the case of impulsive noise, such as munitions, the common weighting used is sound pressure level (SPL). The actual noise level is indicated as P-weighted Decibels (dBP). This weighs the sound energy contained in all frequencies equally. C-weighting (dBC) is also often used for impulsive noise. This metric emphasizes the lower frequency aspect of the noise spectrum which addresses the additional annoyance from vibration of structures.

There are no guidelines or criteria for assessing annoyance related to single noise events. The amount of annoyance is dependent on several factors, such as the characteristics of the noise (i.e., intensity), duration, repetitions, abruptness of onset or cessation, and the ambient noise against which a particular noise event occurs. The factors influencing annoyance, based on surveys are:

- The degree of interference of the noise with activity
- Previous experience of the community with the particular noise
- The time of day during which the noise occurs
- The extent the people believe that the noise output could be controlled

Noises with less than 115 dBP sound level generally do not cause complaints. Sound levels of 115 to 130 dBP have a moderate complaint response and high potential for annoyance and possible structural damage at levels 130 to 140 dBP. Noise levels greater than 140 dBP can cause physiological and structural damage. Also, the threshold of permanent physiological damage to unprotected human ears is set at 140 dBP.

SPLs were used in this analysis to assess potential noise impacts resulting from testing and training activities on TA B-75. The analysis compared the munitions with the highest net explosive weight (NEW) to the known value from the detonation of two Poseidon rocket motors with a combined NEW of 31,720 lbs measured at maximum peak noise level of 125 dBP (UTTR, 2002). For the following alternatives munition noise was compared against this known sound level.

4.7.1 No Action Alternative

Under the No Action Alternative the munition that would be used with the highest NEW is the MK-84 with a NEW of 945 lbs. The detonation of this munition is approximately 3 percent of the reference munition. Atmospheric conditions (temperature and humidity) affect the impacts of noise more than the quantity of explosive used during the bomb detonation event. At higher temperatures and low humidity sound propagates further. It can be said that noise occurring from the No Action Alternative would not exceed the 125 dBP level thus munition noise is not expected to attenuate at levels sufficient to cause harm or annoyance to receptors off base.

4.7.2 Alternative 1

Alternative 1 is expected to utilize the Multiple Launch Rocket System (MLRS) Rocket Pod which has a NEW of 1,300 lbs. This is approximately 4 percent of the reference munition. Thus, noise levels produced from the release of these munitions and others of less explosive weight would not exceed 125 dbP. Detonating on days with high temperatures and low humidity would have the greatest potential for annoyance to nearby off-base receptors. This alternative allows for an increase in mention usage the noise occurrences would be more frequent but is not expected to be substantially louder than current conditions. No adverse from noise is expected to potential receptors.

4.7.3 Alternative 2

Alternative 2 also would use the MLRS Rocket Pod, which has the greatest NEW of the munitions expected to be used. As described under Alternative 1 noise levels are not expected to exceed 125 dBP and would diminish with distance. This alternative analyzes the affect of a 300-percent increase in expenditure use. This would mean noise from munitions would occur more frequently. Adverse impacts from noise are not expected for Alternative 2.

4.8 SAFETY

Military lands are open to recreational use as long as public use and safety does not interfere with the military mission. The use of Reservation lands for mission activities is a higher priority.

The Sikes Act authorizes and encourages Air Force bases to open areas for outdoor recreation, and requires the Air Force to manage the natural resources of reservations to provide for sustained multipurpose use. The Air Base Wing Commander has inherent administrative authority to revoke outdoor recreation privileges (U.S. Air Force, 2003a). In general, testing missions on Eglin are using longer-range weapons and are requiring larger safety footprints extending over more interstitial area with time. Other actions currently undergoing NEPA assessment, such as actions associated with the Eglin Base Realignment and Closure implementation and ALARNG training expansion, may also affect access to recreational areas on the Range. Consequently, future conflicts between recreational use and mission use may arise.

However, TA B-75 is located in an area that is permanently closed to the public. There are open recreation areas in the interstitial area to the north of the northeast corner of TA B-75 near the Ground Training Area, but the air-to-surface targets are located in the central and southwestern portions of TA B-75, which are surrounded by permanently closed restricted access areas. Therefore, there would be no effects to restricted access based on the No Action Alternative, Alternative 1, or Alternative 2.

4.8.1 No Action Alternative

Ordnance Use

A number of standard safety procedures exist to ensure limited public access to affected test areas during testing or training activities. These procedures require every practical effort to keep the designated areas clear of all nonparticipating vehicles and personnel. A key part of these procedures includes development of weapon safety footprints, also referred to as SDZs. SDZs are employed for land-based training where live ordnance is used. These SDZs act as overlays that restrict activities that could normally occur within and adjacent to test or training areas. In general, for aircraft-launched weapons, as the distance from the weapons release to the target increases, so does the footprint. The same is true for altitude and speed at launch or release; as the launch altitude and/or aircraft speed increases, so does the size of the footprint (U.S. Air Force, 2003a).

The methodology for footprint formulation combines munitions system science, computer modeling, and best management practices. These footprints include safety zones for initial impacts as well as ricochets. A buffer zone is typically built into the footprint to further minimize the risk to the public or other resources from the testing of hazardous items on the range. Safety footprints are also employed for land-based training where live ordnance is used. Weapons safety footprints act as overlays that restrict activities that could normally occur within and adjacent to test areas (U.S. Air Force, 2003a).

All ordnance would be handled by trained and qualified personnel in accordance with Air Force and Army explosive safety standards and detailed published technical data. If any unauthorized personnel or vehicles are detected within the area during training, all activity is temporarily halted until the area is again cleared and secured (U.S. Air Force, 2003a).

Weapon safety footprints would be employed for land- and aircraft-based training where live or inert ordnance would be used. Standard safety procedures, such as closing range gates and blocking all passable trails, would be implemented in all cases to ensure limited public access to affected areas during training activities. As a result, there are no safety concerns based on the levels of activity authorized by the *2000 Test Area B-75 Programmatic Environmental Assessment* (U.S. Air Force, 2000) under the No Action Alternative.

Unexploded Ordnance

For the 60 years the Eglin Range has been in use, the location of impact areas and the SDZs have changed many times. Impact areas and SDZs are locations where ordnance might have been accidentally dropped long or short of their target or might have landed after ricocheting. In 2000, Congress dictated an inventory of land contaminated by UXO to gain an understanding of the UXO liability nationwide. The Eglin inventory classified 724 square miles as active range using two subcategories: current impact areas (50,000 acres) and historic impact areas (335,000 acres). Test areas, some cantonment areas on historic ranges (not UXO-contaminated but restricted due to the mission), and some interstitial areas are closed to the public due to high UXO risk (U.S. Air Force, 2001).

Eglin has strict safety policies and procedures in place to minimize the risk posed by UXO to personnel. For example, areas that may contain UXO have signs posted to warn of potential danger. Also, Eglin's Outdoor Recreation Map shows areas of probable and possible UXO contamination. Members of the public are required to observe a UXO awareness video prior to being issued recreation permits to access the Range. No injuries to the public are known to have occurred at Eglin AFB as a result of UXO (Caldwell, 2008). However, UXO could potentially pose a danger to the people involved in training, as personnel must sometimes enter potentially hazardous test areas to set up targets or instrumentation in support of test or training activities. However, other controls are in place for personnel involved in range management and/or engaged in missions on the range.

96 CES/CED manages the risks posed by UXOs on the Range. Equipment such as metal detectors, robots, and protective "bomb suits" are routinely employed to find and deal with UXOs. Once a potentially dangerous item is found, 96 CES/CED determines the best way to disarm it. The item may be removed to another location for disposal or it may be destroyed in place (a small amount of plastic explosive is placed next to the item and detonated from a safe distance). 96 CES/CED will then verify that no dangerous components from the item remain on the Range.

As the result of 60 years of use, most areas on the Eglin Range, including TA B-75 have the potential for UXO contamination. While a detailed records search of range use and potential UXO contamination on the Eglin Range has been accomplished by the USACE and a number of other studies have been completed, records of UXO contamination remain incomplete. Eglin has published a UXO Management Plan, which addresses historic use and contamination, current management practices, and future needs. A number of procedures are in place to minimize risks to Eglin personnel and members of the public who access the Eglin Range. To mitigate any potential adverse impacts from UXO, consultation and coordination with 96 CES/CED personnel would be required to address UXO on TA B-75. Therefore, there are no adverse affects to safety under the No Action Alternative.

4.8.2 Alternative 1

Ordnance Use

Under Alternative 1, the current level of activity at TA B-75 would be authorized. There would be no new user groups, types of activities, or kinds of munitions. Safety procedures and policies that are currently established would remain in effect, and all ordnance would be handled by trained and qualified personnel. As a result, no impacts to safety would occur.

Unexploded Ordnance

Similarly, current procedures and policies for UXO monitoring and clearing would remain in place under Alternative 1. These procedures minimize the risk to Eglin personnel operating on TA B-75. Users would continue to coordinate with 96 CES/CED with regard to UXO encounters on TA B-75. This would mitigate any potential adverse impacts to safety from UXO on TA B-75.

4.8.3 Alternative 2

Under Alternative 2, the frequency and total quantity of munitions used will increase by 300 percent. Despite this increase, the policies and procedures already in place would insure that safety of Eglin AFB personnel is not jeopardized. Due to the increased use of munitions, the likelihood of UXO encounter is increased, but because of the policies in place and the continued coordination with 96 CES/CEG, no new impacts to safety are anticipated.

4.9 LAND USE

4.9.1 No Action Alternative

The No Action Alternative is defined as authorizing the level of activity approved in the 2000 TA B-75 PEA (U.S. Air Force, 2000); however, land use and recreational resources were not covered in the 2000 TA B-75 PEA. TA B-75 is a land area that has a specific land use designation that is crucial to the support of the National Security and Military Strategy of the DoD. The weapon systems testing and training activities performed at TA B-75 is critical to building, maintaining, and improving the defense readiness of the United States military forces. Therefore, no significant impacts are anticipated to land use under the No Action Alternative. There are, however, potential impacts to recreational resources under the No Action Alternative. During certain testing and training activities, the safety footprint might require that portions of recreational areas be temporary closed which could result in an impact to recreational users. However, any impacts to recreational users are anticipated to be minor and temporary since there are other areas on Eglin AFB available and closures only last for the duration of the activity. Therefore, no significant impacts are anticipated to land use and recreation resources under the No Action Alternative.

4.9.2 Alternative 1

Under Alternative 1, the level of activity would increase by 100 percent. The land use designation would remain as a test area for the primary purpose of supporting weapons system

and training activities; therefore no impacts are anticipated to land use under Alternative 1. Similar to the No Action Alternative, there would be a chance that mission safety profiles associated with certain testing and training activities would overlap recreational areas and therefore would require closures to sections of the interstitial areas that are open for recreational purposes. However, closures to these areas would only last for the duration of the activity and therefore are anticipated to be minor and temporary and are not anticipated to result in a significant impact to land use or recreation resources.

4.9.3 Alternative 2

Under Alternative 2, the impacts to land use and recreational areas would be the same as those described under Alternative 1. There would be no changes to land use designation, so there would be no impacts to land use. Under this alternative, there is a possibility of a mission surge by 300 percent. This would likely result in an increase in the potential for closures to certain recreational areas in order to support mission activities performed at TA B-75. However, impacts to recreational resources are anticipated to be minor and temporary since other areas would be available to recreational users and closures would only last for the duration of the activity. Therefore, no significant impacts are anticipated to recreational resources.

4.10 SOCIOECONOMIC RESOURCES

4.10.1 No Action Alternative

The No Action Alternative is defined as authorizing the level of activity approved in the 2000 TA B-75 PEA (U.S. Air Force, 2000). Socioeconomic resources were not explicitly covered in the 2000 TA B-75 PEA; however, noise impacts to the public were considered. Findings from the NAPS model projections that were performed, concluded that no segment of the population outside the boundary of Eglin would be exposed to sound pressure levels of 115 dBP or greater during MK-82 or MK-83 bomb detonation during favorable weather conditions. However, areas off Eglin with population densities of less than 3, greater than 3 but less than 39, and 39 and greater to the north and south of Eglin's boundaries may be impacted by 115 dBP or greater during unfavorable wind and temperature conditions. Approximately, 11 schools and one hospital could also be impacted by 115 dBP noise in Fort Walton Beach during unfavorable weather. Since the public is not allowed in the test area and workers are not allowed within the safety footprint no significant impacts were anticipated to the public from the level of activity approved in the 2000 TA B-75 PEA and therefore, also under the No Action Alternative.

4.10.2 Alternative 1

Under Alternative 1, the level of activity would increase by 100 percent above the approved level in the 2000 TA B-75 PEA. Under this alternative, it is anticipated that there would be more frequent noise impacts to the public from additional munitions expenditures at TA B-75. Although more frequent, noise impacts are anticipated to be minor and temporary lasting only for the duration of the activity. In addition, according to Table 3-14, there were no noise complaints originating from either the unincorporated areas of Harold and Parker, the two closest communities to TA B-75. Although, there is potential for noise impacts from activities

performed at TA B-75, none of the 64 recorded noise complaints in 2008 at Eglin AFB, were confirmed to originate from activities performed at TA B-75.

No special risks to children or disproportionate noise impacts have been identified to areas of environmental justice concerns from activities performed at TA B-75. Therefore, only minor and temporary noise impacts from munitions expenditures are anticipated to socioeconomic resources under Alternative 1.

4.10.3 Alternative 2

Under Alternative 2, there would be an increase of activity by 300 percent. Under this alternative, noise impacts to local communities would be similar to those described under Alternative 1; however, the potential for noise impacts are anticipated to be even more frequent than as anticipated under Alternative 1.

In addition, no special risks to children or disproportionate noise impacts have been identified to areas of environmental justice concerns from activities performed under Alternative 2 at TA B-75. Therefore, only minor and temporary noise impacts from munitions expenditures are anticipated to socioeconomic resources under Alternative 2.

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APPENDIX A

RELEVANT LAWS, REGULATIONS, AND POLICIES

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 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 Policy Directive (AFPD) 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 32-7045; 1-Apr-94; Environmental Compliance and Assessment; Implements AFPD 32-70 by providing for an annual internal self-evaluation and program management system to ensure compliance with Federal, State, local, DoD, and Air Force environmental laws and regulations.

32 CFR 989; 1-Jul-01; Environmental Impact Analysis Process (EIAP)--; This regulation provides a framework for how the Air Force is to comply with NEPA and the CEQ regulations.

Air Force Instruction 32-7062; 1-Apr-94; 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; Clean Air Act, National Ambient Air Quality Standards (CAA, NAAQS); 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. Implements Clean Air Act.

Air Force Instruction 32-7040; 9-May-94; Air Quality Compliance; 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 RCRA as well as CAA.

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

FAC Chap. 62-204; 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 Chap. 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.

Airspace Use

49 USC 106 & Subtitle VII; 1997; Federal Aviation Act of 1958 (FAA); Created the FAA and establishes administrator with responsibility of ensuring aircraft safety and efficient utilization of the National Airspace System.

14 CFR Part 71; 1997; Federal Aviation Regulation (FAR); Defines federal air routes, controlled airspace, and flight locations for reporting position.

14 CFR Part 73; 1997; FAR No. 53; Defines and prescribes requirements for special use airspace.

14 CFR Part 91; 1997; 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 DOI and State, opens AF 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. AF is to manage the natural resources of its reservations to provide for sustained multipurpose use and public use.

16 USC 1451 to 1465; 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; 1997; Federal Land Policy and Management Act of 1976; Provides that the Sec. of Interior shall develop land use plans for public lands within 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; 1997; 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; 1-Apr-94; 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; 31-Mar-94; 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 which are incompatible with aircraft operations.

Air Force Instruction 32-7064 22-Jul-94; 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 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; 1-Mar-94; 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 (dBs) 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 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 NPDES permit program for discharge into surface waters and storm water control; 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 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 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 HW 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.

Executive Order 12114, 44 FR, No. 62; 01-04-79; Environmental Effects Abroad of Major Federal Actions. Activities outside the jurisdiction of the United States which significantly harm the natural or physical environment shall be evaluated. An EIS shall be prepared for major federal actions having significant environmental effects within the global commons (i.e., Antarctica, oceans).

Department of Defense Directive 6050.7; 03-31-79; Environmental Effects Abroad of Major Department of Defense Actions. Implements Executive Order 12114.

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 Clean Water Act, Safe Drinking Water Act, and Water Quality Act of 1987.

Air Force Instruction 32-7006 04-29-94; Environmental Program in Foreign Countries; Implements DoD Directive 6050.7.

Air Force Instruction 32-7041; 13-May-94; Water Quality Compliance; Instructs the Air Force on maintaining compliance with the Clean Water Act; other federal, state, and local environmental regulations; and related DoD and AF water quality directives.

Air Force Instruction 32-7064; 22-Jul-94; 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. Chaps. 253, 258; Florida Aquatic Preserves Act; Establishes state aquatic preserves.

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

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

FAC Chap. 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; 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 Dept. 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; 22-Jul-94; 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 non-native, 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); 2006; 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 of 1972, as amended; 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; Endangered Species Act 1973 (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 FWS or the NMFS 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; 22-Jul-94; 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 HM and institutes material safety data sheets which provide this information.

Department of Defense Instruction 6055.1; Establishes occupational safety and health guidance for managing and controlling the reduction of radio frequency exposure.

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 Instructions 13-212v1 and v2; 1994; Weapons Ranges and Weapons Range Management; 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.

Air Force Instruction 32-2001; 16-May-94; The Fire Protection Operations and Fire Prevention Program; Identifies requirements for Air Force fire protection programs (equipment, response time, and training).

Air Force Instruction 32-7063; 1-Mar-94; 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-96; 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 Instruction 91-301; 1-Jun-96; Air Force Occupational and Environmental Safety, Fire Protection and Health (AFOSH) Program); Identifies occupational safety, fire prevention, and health regulations governing Air Force activities and procedures associated with safety in the workplace.

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 Air Force Base.

42 USC Sect. 2011 - Sect. 2259; Atomic Energy Act (AEA); Assure the proper management of source, special nuclear, and by-product material.

42 USC 6901 et seq.; 1980; Resource Conservation and Recovery Act of 1976 and Solid Waste Disposal Act of 1980 (RCRA); Subchapter III sets forth HW 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; Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended (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; Emergency Planning and Community Right-to-Know Act (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 Air Force Base (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 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 (FY) 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 HM in accomplishment of the Air Armament Center (AAC) 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, Emergency Planning and Community Right-to-Know Act, 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.

Air Armament Center Instruction 32-7003; 26 July 2004; Hazardous Waste Management; This instruction is intended to provide a framework for complying with environmental standards applicable to HW, Universal Waste (UW), Special Waste (SW) and used petroleum products on Eglin AFB.

Air Force Instruction 32-7020; 19-May-94; 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; 12-May-94; Solid and Hazardous Waste Compliance; Provides that each installation must develop a HW and a SW management plan; characterize all HW streams; and dispose of them in accordance with the AFI. Plans must address pollution prevention as well.

Air Force Instruction 32-7080; 12-May-94; Pollution Prevention Program; Each installation is to develop a pollution prevention management plan that addresses ozone depleting chemicals; USEPA 17 industrial toxics; hazardous and solid wastes; obtaining environmentally friendly products; energy conservation, and air and water.

Air Force Policy Directive 40-2; 8-Apr-93; 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

10 USC 2701 note, Public Law 103-139; 1997; Legacy Resource Management Program; Provides funding to conduct inventories of all scientifically significant biological assets of Eglin AFB.

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 Sec. 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 Sec. may undertake preservation.

16 USC 470aa-470mm, Public Law 96-95; 1997; Archaeological Resources Protection Act of 1979; Establishes permit requirements for archaeological investigations and ensures protection and preservation of archaeological sites on federal property.

16 USC 470 to 470w-6-16 USC 470f, 470h-2; 1997; National Historic Preservation Act (NHPA); Requires Federal agencies to (1) allow the Advisory Council on Historic Preservation to comment before taking action on properties eligible for the NRHP and (2) preserve such properties in accordance with statutory and regulatory provisions.

25 USC 3001 - 3013), (Public Law 101-601; 1997; Native American Graves Protection and Repatriation Act of 1991; Federal agencies must obtain a permit under the Archeological Resources Protection Act before excavating Native American artifacts. Federal agencies must inventory and preserve such artifacts found on land within their stewardship.

42 USC 1996; American Indian Religious Freedom Act; Federal agencies should do what they can to ensure that American Indians have 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; Protection of Archaeological Resources: Uniform Regulations; 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; Nominations to NRHP; Details how the Federal agency Preservation Officer is to nominate properties to the Advisory Council for consideration to be included on the NRHP.

36 CFR Part 800; Protection of Historic and Cultural Properties; Sets out the Section 106 process for complying with Sections 106 and 110 of the NHPA: the Agency official, in consultation with the SHPO, identifies and evaluates affected historic properties for the Advisory Council.

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 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 4710.1; Archaeological and Historic Resources Management; Establishes policy requirements for archaeological and cultural resource protection and management for all military lands and reservations.

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 National Historic Preservation Act, Executive Order 11593, and DoD Directive 470.1.

Air Force Instruction 32-7065; 13-Jun-94; Cultural Resource Management; Directs AF bases to prepare cultural resources management plans to comply with historic preservation requirements, Native American considerations; and archeological resource protection requirements, as part of the Base Comprehensive Plan.

Air Force Policy Letter; 4-Jan-82; Establishes Air Force policy to comply with historic preservation and other federal environmental laws and directives.

APPENDIX B

MAXIMUM ANNUAL EXPENDITURE BY MISSION

Maximum Annual Expenditure by Mission

Mission	CATEGORY	NOMENCLATURE	No Action	Alternative 1		Alternative 2
				current	future	
1 SOSS	Small Arms	.50 CAL	0	0	36,000	144,000
	Small Arms	.45 CAL	0	0	24,000	96,000
	Small Arms	9MM BALL	0	0	24,000	96,000
	Small Arms	5.56MM BALL	0	0	64,000	256,000
	Small Arms	5.56MM LINKED	0	0	48,000	192,000
	Small Arms	7.62MM LINKED	0	0	48,000	192,000
	Small Arms	40 MM LINKED	0	0	2,400	9,600
	Small Arms	40 MM SINGLE	0	0	1,200	4,800
1 SOW EW Training Support	Countermeasures	CARTRIDGE, CHAFF, RR170	0	4,635	0	18,540
	Countermeasures	CARTRIDGE,IMPULSE	0	42,120	0	168,480
	Countermeasures	FLARE, IR CM, M206	0	16,470	0	65,880
	Countermeasures	FLARE,IR CM M211	0	540	0	2,160
	Countermeasures	RR-188 CHAFF	0	15,300	0	61,200
18 Flight Test Squadron (FLTS) Electronic Combat Testing Support	Countermeasures	CTG IMPULSE BBU-35/B	0	77	0	308
	Countermeasures	FLARE, IR CM, M206	0	65	0	258
	Countermeasures	FLARE,IR CM M211	0	90	0	359
18 Flight Test Squadron (FLTS) Fixed Wing Testing Support	Small Arms	CARTRIDGE,7.62 MILL	0	2,517	0	10,067
	Small Arms	CARTRIDGE,105 MILLI	0	16	0	62
	Small Arms	GRENADE, HAND SMOKE RED M18	0	2	0	7
	Small Arms	GRN HAND SMOKE VIOLET M18	0	2	0	7
	Countermeasures	FLARE,IR CM M211	0	41	0	163
	Countermeasures	FLARE,COUNTERMEASUR	0	46	0	185
	Small Arms	CTG IMPULSE BBU-35/B	0	54	0	216
	Small Arms	25MM	0	38	0	153
	Small Arms	CARTRIDGE, 40MM	0	8	0	34
	Countermeasures	MJU-50 Flare	0	14	0	56
33 FW (Joint Strike Fighter)	Small Arms	25 MM TP	0	0	57,489	229,956
33 FW Training Support	Small Arms	CARTRIDGE,5.56 MILL	0	96,030	0	384,120
85 TES Training Support	Bombs	BDU-33	28	36	0	144
	Bombs	GBU-10	8	0	0	0
	Bombs	GBU-12 BDU50 INERT	24	0	0	0

Maximum Annual Expenditure by Mission, Cont'd

Mission	CATEGORY	NOMENCLATURE	No Action	Alternative 1		Alternative 2
				current	future	
96 Ground Combat Training Support (96 GCTS)	Small Arms	5.56 MM BALL	0	0	57,725	230,900
	Small Arms	7.62 MM LINK	0	0	14,620	58,480
	Small Arms	40 MM TP	0	0	78	312
	Small Arms	5.56 LINK	0	0	19,860	79,440
96 SFS Training Support	Small Arms	CARTRIDGE,5.56 MILL	0	333,435	0	1,333,740
	Small Arms	5.56 MM 4-1 TRACER	0	5,780	0	23,120
	Small Arms	5.56 MM BALL M193	0	32,112	0	128,448
	Small Arms	5.56 MM M196	0	14,982	0	59,928
	Small Arms	5.56 MM BALL	17,160	71,466	0	285,864
	Small Arms	CTG 5.56 MM BLK M200 LNKD	0	1,200	0	4,800
	Small Arms	CTG 5.56 MM BLK M200	19,000	64,820	0	259,280
	Small Arms	CTG 7.62 MM BLK M82 LNKD M13	5,140	11,120	0	44,480
	Small Arms	CTG 7.62 MM 4 BALL M80/1 TR M62	0	42,300	0	169,200
	Small Arms	CTG 7.62 MM NATO BALL M80	0	48,000	0	192,000
	Small Arms	7.62 MM LINKED	5,154	19,232	0	76,928
	Small Arms	7.62 MM M80 4-1 TRACER	0	6,000	0	24,000
	Small Arms	7.62 MM BALL	8,000	0	0	0
	Small Arms	9 MM BALL NATO	0	58,010	0	232,040
	Small Arms	50 CAL	4,000	0	0	0
	Small Arms	5.56 MM	20,000	25,094	0	100,376
	High Explosive	CTG 40MM HE M384	80	0	0	0
	Small Arms	40 MM RED SMOKE	0	16	0	64
	Small Arms	40 MM GREEN SMOKE	0	22	0	88
	Small Arms	40 MM GRENADE PRACT	900	2,450	0	9,800
	Small Arms	CARTRIDGE, 40 MM	0	375	0	1,500
	Small Arms	40 MM WHITE STAR, M583	80	22	0	88
	High Explosive	40 MM HEDP	0	12	0	48
	Small Arms	GRENADE, HAND FRAG DELAY XM67	0	260	0	1,040
	Small Arms	HAND SMK RED	0	260	0	1,040
	Small Arms	HAND SMK	0	406	0	1,624

Maximum Annual Expenditure by Mission, Cont'd

Mission	CATEGORY	NOMENCLATURE	No Action	Alternative 1		Alternative 2
				current	future	
	Small Arms	SIMULATED RIOT GAS	0	230	0	920
	Rocket	66 MM LAWS ROCKET	60	180	0	720
96 SFS Training Support, Cont'd	Rocket	35 MM M190 PRACTICE	276	0	0	0
	Mines	MINE APERS M18 W/ACCESSORIES	0	44	0	176
	Small Arms	GRND WHITE	0	148	0	592
	Small Arms	TRIP FLARE	0	118	0	472
	Small Arms	ARTY BURST	0	390	0	1,560
	Small Arms	SIMULATED BOOBY TRAP, M118	0	54	0	216
	Small Arms	SIM, EXPLOSIVE BOOBY TRAP	0	234	0	936
	Small Arms	GREN HAND SIMULATOR (SURROGATE)	0	516	0	2,064
Advanced Amphibious Assault Vehicle (AAA)	Small Arms	.50 CAL BALL	0	1,467	0	5,868
	Small Arms	30 MM TP	0	1,976	0	7,904
	Small Arms	30 MM TP, PGU-15/B	0	1,448	0	5,792
	Small Arms	30 MM TP-T	0	2,357	0	9,428
	Small Arms	40 MM TP GRENADE	0	96	0	384
	Small Arms	7.62 MM BALL	0	810	0	3,240
	Small Arms	7.62 MM LINKED	0	3,200	0	12,800
	Small Arms	7.62 MM M80 4-1 TRACER	0	7,815	0	31,260
	Small Arms	7.62 MM 4-1	0	400	0	1,600
	Small Arms	M8 SMOKE GRENADE (WHT)	0	6	0	24
Advanced Systems Employment Project	Bombs	BOMB, MK-84 INERT	0	18	0	72
	Bombs	GBU-31	0	2	0	8
Air-to-Ground Engagement Simulation (AGES)	Bombs	BOMB, MK-84 INERT	0	6	0	24
	Bombs	GBU-31 (JDAM-2000 LB)	0	3	0	12
	Bombs	MARK 84	0	1	0	4
	Bombs	MARK 85	0	1	0	4
AL Army National Guard Training Support	Small Arms (Live)	CARTRIDGE, 5.56 MM	0	101,430	0	405,720
	Small Arms (Live)	CARTRIDGE, 5.56 MM	0	279,585	0	1,118,340
	Small Arms (Live)	CARTRIDGE, 5.56 MM	0	24,000	0	96,000

Maximum Annual Expenditure by Mission, Cont'd

Mission	CATEGORY	NOMENCLATURE	No Action	Alternative 1		Alternative 2
				current	future	
	Small Arms (Live)	CTG 7.62 MM 4 BALL M59/M80/1 TR M62	0	131,208	0	524,832
	Small Arms	CTG CAL .50 SLAP-T M962	0	10,508	0	42,032
	Small Arms (Live)	CTG CAL .50 4 API M8/1 API-T M20	0	59,787	0	239,148
	Small Arms (Live)	CARTRIDGE,CALIBER .	0	36,000	0	144,000
AL Army National Guard Training Support, Cont'd	Small Arms (Live)	5.56 MM	0	185,546	0	742,184
	Small Arms	9 MM	0	37,950	20,000	231,800
	Small Arms (Live)	CARTRIDGE,40 MILLIM	0	234	0	936
	Small Arms (Live)	CTG 120 MM HEAT TP-T TANK RD (SURROGATE)	0	506	0	2,024
	Small Arms (Live)	CTG 120 MM TPCSDS-T TANK RD (SURROGATE)	0	1,108	0	4,432
	Small Arms	120 MM TP (HEAT) M830A1	0	340	0	1,360
	Rocket (Live)	MLRS ROCKET POD,RRPR,M28A1	0	174	0	696
	Small Arms	120 MM HEAT TP-T TANK RD	0	72	0	288
	Small Arms	120 MM SABOT	0	88	0	352
	Small Arms	.50 CAL	0	1,352	0	5,408
	Small Arms	5.56 MM BALL	0	1,264	22,000	93,056
	Small Arms	.50 CAL 4/1 BALL/TRACER MIX	0	3,000	1,000	16,000
	Small Arms	7.62 BALL	0	8,000	0	32,000
	Small Arms	.50 CAL API	0	0	20,000	80,000
	Small Arms	40 MM MK-19 NON-DUD PRODUCING PRACTICE GRENADE	0	0	1,000	4,000
	Small Arms	5.56 MM TRACER	0	0	15,000	60,000
	Small Arms	5.56 BLANKS	0	0	20,000	80,000
	Small Arms	7.62 MM BLANKS	0	0	10,000	40,000
	Small Arms	7.62 MM LINKED	0	0	80,000	320,000
Army Ranger Training Support	Small Arms (Live)	5.56 MM BALL	0	25,000	15,000	160,000
	Small Arms (Live)	5.56 MM TRACER M856	0	8,000	0	32,000
	Small Arms (Live)	CARTRIDGE, 5.56 MM	0	42,171	0	168,684
	Small Arms (Live)	UNK	0	105,000	0	420,000

Maximum Annual Expenditure by Mission, Cont'd

Mission	CATEGORY	NOMENCLATURE	No Action	Alternative 1		Alternative 2
				current	future	
	Small Arms (Inert)	CTG 5.56MM BLK M200	0	8,000	0	32,000
	Small Arms (Live)	CTG 7.62MM 4 BALL M80/1 TR M62	0	15,000	39,000	216,000
	Small Arms (Live)	5.56 MM	0	37,800	0	151,200
	Small Arms	9 MM	0	2,400	0	9,600
	Small Arms	5.56 MM LINKED	0	0	22,000	88,000
Battlefield Ordnance Awareness	Small Arms	.50 CAL API	118	0	0	0
	Small Arms	105 MM TP M2	20	0	0	0
Battlefield Ordnance Awareness, Cont'd	Small Arms	155 MM TP	16	0	0	0
	Small Arms	208 MM TP	24	0	0	0
	Small Arms	7.62 MM LINKED	206	0	0	0
	Small Arms	CTG 120 MM TPCSDS-T TANK RD (SURROGATE)	12	0	0	0
Boeing Small Diameter Bomb (SDB) CAD IMV Flight /Ground Tests	Bombs	SDB-DT5	0	1	0	4
Boeing Small Diameter Bomb (SDB) Ground Tests	Explosive Ordnance	RP-87, DETONATOR	0	21	0	84
	Bombs	SDB LIVE SLED TEST WARHEAD	0	9	0	36
	Bombs	SDB REMOTE DEMO UNIT FUZE	0	18	0	72
	Bombs	SDB WARHEAD	0	8	0	32
Bold Quest Plus	Small Arms	CTG, 7.62 MM 4 BALL 1 TRACER LI	0	880	0	3,520
Chicken Little III Warhead Target TST	Explosive Ordnance	DETONATOR, RP-83 EBW	0	6	0	24
	Countermeasures	MJU-50 FLARE	0	1	0	4
	Bomb	FERTILIZER BOMB 2400 LBS, LIVE	0	1	0	4
	High Explosive	HE, ANFO	0	1	0	4
	Explosive Ordnance	DIESEL FUEL, 1 GAL	0	480	0	1,920
	Bomb	FERTILIZER BOMB 4,800 LBS	0	2	0	8
	High Explosive	HE, AMMONIA NITRATE	0	1	0	4
	Explosive Ordnance	HDP BOOSTER	0	12	0	48

Maximum Annual Expenditure by Mission, Cont'd

Mission	CATEGORY	NOMENCLATURE	No Action	Alternative 1		Alternative 2
				current	future	
	Explosive Ordnance	ANFO AMMONIUM NITRATE	0	7,200	0	28,800
	Explosive Ordnance	DET CORD	0	120	0	480
Eglin Test Area Cleanup	Bombs	BDU-33	192	0	0	0
	High Explosive	C-4, CASE (32 LB HE)	130	0	150	600
	Explosive Ordnance	DET CORD, FT	1,800	0	2,000	8,000
	Countermeasures	SIGNAL SMK & ILLUM MK6 MOD5 (surrogate)	44	0	0	0
	Explosive Ordnance	Demolition Charges	0	0	20	80
ERDC Test Support	Explosive Ordnance	CHG DEMO M112 COMP 4 1.25 LBS	0	5,311	0	21,244
	Explosive Ordnance	CAP,BLASTING	0	24	0	96
	Explosive Ordnance	CORD ASSEMBLY, DETONATING	0	100	0	400
	Explosive Ordnance	FUZE, BLASTING, TIME	0	150	0	600
ERDC Test Support, Cont'd	Explosive Ordnance	IGNITER TIME BLAST FUZE M60	0	18	0	72
	Explosive Ordnance	120MM MORTAR W/ FUZE, PROPEL.	0	6	0	24
	Explosive Ordnance	40/85MM (HEAT) GRENADE	0	12	0	48
	Explosive Ordnance	DETONATOR, RP-83 EBW	0	21	0	84
	Explosive Ordnance	RP-87, DETONATOR	0	12	0	48
	Explosive Ordnance	HDP BOOSTER	0	30	0	120

Maximum Annual Expenditure by Mission, Cont'd

Mission	CATEGORY	NOMENCLATURE	No Action	Alternative 1		Alternative 2
				current	future	
	Explosive Ordnance	ANFO AMMONIUM NITRATE	0	29,400	0	117,600
	Explosive Ordnance	DET CORD	0	750	0	3,000
	Mortars	120 MM MORTAR W/FUZE AND CHARGE	0	6	0	24
	Mortars	82 MM MORTAR W/FUZE AND PROPELL	0	6	0	24
Eval (BOBS) Beach Obstacle Breaching Sys	Bombs	MK-83	20	0	0	0
F-15 Multistage Improvement Program (MSIP) FOT&E Support	Missiles	AIM-7, Inert	0	4	0	16
	Explosive Ordnance	CHG DEMO M112 W/TAGGANT	0	40	0	160
F-16 Peace ONYN I Block 40 Program	Bombs	BDU-33	12	0	0	0
	Bombs	MK-106	12	0	0	0
Fighter Enhancement Program (FEP)	Missiles	AIM 120	0	7	0	28
	Missiles	AIM-120C	0	4	0	16
	Missiles	GUIDED MISSILE, INTE	0	3	0	12
Flare Safety Zone For AMC Aircraft	Countermeasures	M-206 IR FLARE	0	440	0	1,760
	Countermeasures	MJU-10 IR FLARE	0	440	0	1,760
	Countermeasures	MJU-46 FLARES	0	220	0	880
	Countermeasures	MJU-7 IR FLARE	0	440	0	1,760
GDLS 105 mm Turret Demonstration	Small Arms	105 MM TP M-724A1	0	50	0	200
HAVE ACE Training Support	Small Arms	CARTRIDGE,5.56 MM	0	31,500	0	126,000
	Small Arms	CARTRIDGE,7.62 MM	0	31,500	0	126,000
	Small Arms	CTG CAL .50 BALL M2 LNKD	0	28,000	0	112,000
High Explosive Fragment Test Program	High Explosive	C-4, 1 LB HE	0	5	0	20
	Explosive Ordnance	CLASSIFIED	0	4	0	16

Maximum Annual Expenditure by Mission, Cont'd

Mission	CATEGORY	NOMENCLATURE	No Action	Alternative 1		Alternative 2
				current	future	
	Explosive Ordnance	DETONATOR, RP-83	0	1	0	4
	Explosive Ordnance	HIGH EXPLOSIVE, HMX	0	10	0	40
HQ AFSOC Security Police Training	Small Arms	12 GAUGE #00 PLASTIC	0	3,500	0	14,000
	Small Arms	5.56 MM BALL	4,840	102,364	0	409,456
	Small Arms	5.56 MM LINKED	0	18,000	0	72,000
	Small Arms	5.56 MM TRACER M856	0	6,584	0	26,336
	Small Arms	5.56 MM BALL M193	0	15,000	0	60,000
	Small Arms	5.56 MM M196	9,752	0	0	0
	Small Arms	CTG 5.56 MM BLK M200	13,752	40,000	0	160,000
	Small Arms	CTG 7.62 MM BLK M82 LNKD M13	15,200	20,000	0	80,000
	Small Arms	7.62 MM 4-1	0	9,000	0	36,000
	Small Arms	7.62 MM NATO BALL	0	7,000	0	28,000
	Small Arms	7.62 MM LINKED	66,143	0	0	0
	Small Arms	7.62 MM BALL	0	50,400	0	201,600
	Small Arms	9 MM BALL NATO	39,280	66,036	0	264,144
	Small Arms	CTG CAL .38 SPEC TR (SURROGATE)	0	1,200	0	4,800
	Small Arms	.45 CAL BALL	0	14,300	0	57,200
	Small Arms	40 MM RED SMOKE	0	24	0	96
	Small Arms	40 MM GREEN SMOKE	0	52	0	208
	Small Arms	40 MM YELLOW SMOKE	0	88	0	352
	Small Arms	40 MM GRENADE PRACT	1,014	2,956	0	11,824
	High Explosive	40 MM HEDP	0	8	0	32
	High Explosive	40 MM CTG HE M406 WFZ M551	0	120	0	480
	Small Arms	GREN HAND INCND TH3 AN-M14	0	32	0	128
	Small Arms	HAND SMK	0	172	0	688
	Small Arms	HAND SMK RED	0	68	0	272
	Small Arms	DISTRESS FLARES	0	40	0	160
	Bombs	MK-124	0	64	0	256

Maximum Annual Expenditure by Mission, Cont'd

Mission	CATEGORY	NOMENCLATURE	No Action	Alternative 1		Alternative 2
				current	future	
	Explosive Ordnance	AIR BURST SIMULATOR	0	332	0	1,328
	Explosive Ordnance	TRIP FLARE	0	180	0	720
HQ AFSOC Security Police Training, Cont'd	Explosive Ordnance	ARTY BURST	0	200	0	800
	Explosive Ordnance	SIMULATED BOOBY TRAP, M118	0	168	0	672
	Explosive Ordnance	SIM, EXPLOSIVE BOOBY TRAP	0	242	0	968
	Explosive Ordnance	GREN HAND SIMULATOR (surrogate)	0	1,102	0	4,408
	Explosive Ordnance	CHG DEMO M112 W/TAGGANT	0	140	0	560
	Explosive Ordnance	CAP BLASTING NON ELECT M7	0	112	0	448
	Explosive Ordnance	DET CORD, FT	0	4,400	0	17,600
	Explosive Ordnance	FUSE BLASTING TIME M700 4000 FT	0	1,892	0	7,568
	Explosive Ordnance	IGN TIME BLASTING FUSE M2	0	332	0	1,328
	Explosive Ordnance	SMOKE GRENADES, M18	0	100	0	400
Hurlburt Field SARC Support	Explosive Ordnance	40 MM GRENADE PRACT	0	6,690	0	26,760
	Small Arms	5.56 MM 4-1 TRACER	53,200	0	0	0
	Small Arms	7.62 MM BALL	217,420	0	0	0
	Small Arms	7.62 MM LINKED	14,009	0	0	0
	Explosive Ordnance	ARTY BURST	0	20	0	80
	Small Arms	CTG 5.56 MM BLK M200	0	5,584	0	22,336
	Small Arms	CTG 7.62 MM BLK M82 LNKD M13	0	2,600	0	10,400

Maximum Annual Expenditure by Mission, Cont'd

Mission	CATEGORY	NOMENCLATURE	No Action	Alternative 1		Alternative 2
				current	future	
IMP TGT ACQ Sight Limited User Test II	Missiles	BGM-71E TOW MSL	0	35	0	140
JDAM Technology Insertion Testing	Bombs	BOMB, BLU-126	0	6	0	24
	Bombs	CUP, NOSE SUPPORT MK81, 82, 83, 84	0	6	0	24
	Bombs	FMU-152A/B FUZE SYSTEM	0	6	0	24
	Bombs	KMU-572	0	4	0	16
	Bombs	NOSE PLUG BOMB 750LB M117	0	6	0	24
Joint Services EOD Training	High Explosive	CTG 40 MM HE M384	0	1,160	0	4,640
	High Explosive	CTG 60 MM HE M888	0	128	0	512
	High Explosive	CTG 81 MM HE M374 W/PD FUZE	0	480	0	1,920
	Guns (Live)	3 INCH PROJECTLE	0	44	0	176
	High Explosive	CTG 105 MM HE M1 W/O FUZE & SUPPL CHG	0	108	0	432
	High Explosive	CTG 105 MM HEP-T M393A2	0	106	0	424
	High Explosive	CTG 4.2 IN HE M329A2 W/O FUZE	0	48	0	192
Joint Services EOD Training, Cont'd	High Explosive	PROJ 5IN/38 CAL HE-MT/PD MK35/47/49	0	16	0	64
	High Explosive	PROJ 155 MM HE M107B2	0	142	0	568
	High Explosive	PROJ 8 IN HE M106 W/O FUZE	0	84	0	336
	Bombs	BOMB GP 500 LB MK82 MOD1	202	90	0	360
	Bombs	BOMB GP 1000 LB MK83 MOD4	0	20	0	80
	Bombs	BOMB GP 2000 LB MK84 MOD2	8	12	0	48
	Explosive Ordnance	GRENADE, HAND INCENDARY AN M14	0	24	0	96
	High Explosive	GREN RIFLE HE (SURROGATE)	0	188	0	752
	Explosive Ordnance	MINE APERS M18 W/ACCESSORIES	0	564	0	2,256
	Explosive Ordnance	MINE AT HEAVY M15	0	462	0	1,848
	Explosive Ordnance	CHG DEMO SHAPED MK45 MOD0	0	4	0	16

Maximum Annual Expenditure by Mission, Cont'd

Mission	CATEGORY	NOMENCLATURE	No Action	Alternative 1		Alternative 2
				current	future	
	Explosive Ordnance	CHG DEMO M112 W/TAGGANT	7,000	1,500	0	6,000
	Explosive Ordnance	CHG DEMO M118	0	56	0	224
	Explosive Ordnance	DEMO KIT BANGALORE TORPEDO M1A2	0	44	0	176
	Explosive Ordnance	CHARGE, DEMO	0	20	0	80
	High Explosive	CHARGE, DEMO 2 LBS HE	0	12	0	48
	Explosive Ordnance	CHG DEMO 40LB CRATERING	0	2	0	8
	Explosive Ordnance	CHG DEMO MK2 MOD3	84	16	0	64
	Explosive Ordnance	CHG DEMO MK8 MOD2	0	76	0	304
	Explosive Ordnance	CAP, BLASTING ELEC M	0	596	0	2,384
	Explosive Ordnance	CAP BLASTING NON ELECT M7	0	662	0	2,648
	Explosive Ordnance	CHG DEMO SHAPED M2A4 15LB	0	2	0	8
	Explosive Ordnance	CHG DEMO SHAPED M3 SERIES 40 LB (surrogate)	0	4	0	16
	Explosive Ordnance	DET CORD, FT	0	55,370	0	221,480
	Explosive Ordnance	CUTTER CABLE MK3 MOD1 EXPL LOADED	0	9	0	36
	Explosive Ordnance	FUSE BLASTING TIME M700 4000 FT	0	9,128	0	36,512
	Explosive Ordnance	CHG ASSEMBLY DEMO M183 COMP 4	0	42	0	168
	Explosive Ordnance	IGN TIME BLASTING FUSE M2	0	948	0	3,792

Maximum Annual Expenditure by Mission, Cont'd

Mission	CATEGORY	NOMENCLATURE	No Action	Alternative 1		Alternative 2
				current	future	
Joint Services EOD Training, Cont'd	Explosive Ordnance	CHG ASSY DEMO MK133 MODS 0/1/2 (surrogate)	0	276	0	1,104
	Explosive Ordnance	CHG ASSY DEMO MK 135/137/138 (surrogate)	0	27	0	108
	Explosive Ordnance	CHG EXPL ORDNANCE DISPOSAL MK86 MOD0	0	2	0	8
	Explosive Ordnance	CHG EXPL ORDNANCE DISPOSAL MK87 MOD0	0	2	0	8
	Explosive Ordnance	CHG EXPL ORDNANCE DISPOSAL MK88 MOD0	46	2	0	8
	Explosive Ordnance	CHG EXPL ORDNANCE DISPOSAL MK89 MOD0	0	2	0	8
	Explosive Ordnance	CUTTER, POWDER	0	4	0	16
	Explosive Ordnance	ELEC BLAST CAP	0	60	0	240
	Explosive Ordnance	CHG FLEX 20 GRAM (PETN) MK140 MOD O (surrogate)	0	27	0	108
	Explosive Ordnance	CHG DEMO SHAPED FLEX LINEAR MK144 MOD0	0	20	0	80
	Explosive Ordnance	CHG DEMO SHAPED FLEX LINEAR MK149 MOD0	0	20	0	80
	Explosive Ordnance	DETONATOR NONELECT MK126 MOD0	0	4	0	16
	Explosive Ordnance	DETONATOR NONELECT MK121 MOD0	0	4	0	16
	Explosive Ordnance	INITIATOR PYROTECHNIC (surrogate)	0	6	0	24
	Explosive Ordnance	CHG KIT DEMO TUBULAR SWS MK75 MOD0	0	8	0	32
	Explosive Ordnance	WHD MK16 (surrogate)	0	8	0	32

Maximum Annual Expenditure by Mission, Cont'd

Mission	CATEGORY	NOMENCLATURE	No Action	Alternative 1		Alternative 2
				current	future	
	Explosive Ordnance	WARHEAD, MK-101	0	70	0	280
	Explosive Ordnance	WARHEAD, ROCKET, SA13	0	3	0	12
	Explosive Ordnance	WARHEAD, ROCKET, SA4	0	4	0	16
	Explosive Ordnance	WHD GM (surrogate)	0	2	0	8
JSOW DT/OT Test Series Support	Bombs	JSOW HNS IV EFI BOOSTER	0	6	0	24
	Bombs	JSOW FLSC	0	3	0	12
	Bombs	FLEXIBLE CONFINED DET. CORD	0	12	0	48
	Bombs	AGM-154A P/N 4211100-1	0	7	0	28
LASER Infrared Countermeasures System (IRCM) Flyout Experiment (LIFE)	Missiles	FIM-43 REDEYE MISSILE	0	8	0	32
	Rockets	RCKT 2.75IN PRAC WHD INERT WTU-18 (SURROGATE)	0	16	0	64
Limited Eval MOD I-800 Warhead (FCT)	Warhead	I-800 HARDENED TGT WHD	4	0	0	0
LTD FCT Of French Blast Frag Warhead	Warhead	FRENCH FCT WHD	4	0	0	0
LWRS Test	Small Arms	L8A3 GRENADES	0	250	0	1,000
	Lasers	LASER OPS, 1 HR	0	14	0	56
	Countermeasures	SMOKE, M76	0	250	0	1,000
M-60 Tank Gun TRNG [Natl Guard]	Small Arms	5.56 MM M196	0	13,000	0	52,000
	Small Arms	5.56 MM BALL	0	53,838	0	215,352
	Small Arms	7.62 MM 4-1	0	126,000	0	504,000
	Small Arms	.50 CAL BALL LINKED	0	21,200	0	84,800
	Small Arms	.50 CAL API	11,708	22,000	0	88,000
	Small Arms	CTG 25 MM TP PGU-23/U (SURROGATE)	0	1,800	0	7,200
	Small Arms	CTG 120 MM HEAT TP-T TANK RD (SURROGATE)	444	1,320	0	5,280

Maximum Annual Expenditure by Mission, Cont'd

Mission	CATEGORY	NOMENCLATURE	No Action	Alternative 1		Alternative 2
				current	future	
	Small Arms	CTG 120 MM TPCSDS-T TANK RD (SURROGATE)	1,768	2,400	0	9,600
	Small Arms	120 MM HEAT TP-T TANK RD	0	488	0	1,952
	Small Arms	120 4 SABOT	0	612	0	2,448
	Small Arms	.50 4 BALL	0	9,148	0	36,592
	Small Arms	7.62 4 BALL	0	30,484	0	121,936
	Small Arms	9 4	0	8,536	0	34,144
Naval Expeditionary Warfare Training Sup	Small Arms	CARTRIDGE, 5.56 MM	0	150,000	0	600,000
	Small Arms	CTG 7.62 4 4 BALL M80/1 TR M62	0	17,200	0	68,800
	Small Arms	CARTRIDGE, CALIBER .	0	135,000	0	540,000
	Small Arms	CTG 25 MM TP-T M793	0	36,000	0	144,000
	Small Arms	CARTRIDGE,40 MM	0	105,000	0	420,000
	Small Arms	CTG 60 MM TP M50A2	0	120	0	480
Naval Expeditionary Warfare Training Sup, Cont'd	Small Arms	CTG 120 MM HEAT TP-T TANK RD (SURROGATE)	0	72	0	288
	Small Arms	CTG 120 MM TPCSDS-T TANK RD (SURROGATE)	0	50	0	200
	Unknown	UNK	0	6	0	24
	Explosive Ordnance	CHARGE,DEMOLITION	0	300	0	1,200
	Explosive Ordnance	PRIMER PERC M58	0	4	0	16
	Explosive Ordnance	PRIMER PERC MK22 MOD1	0	4	0	16
	Missiles	TOW MISSILES	0	24	0	96
Navy Training And Pre Deployment Exercis	Lasers	LASER GUIDED TRAINING RD	0	4	0	16
NCSS Test & Training Support	Missiles	STINGER MSL (FIM-92A)	0	4	0	16
Operation Eval 84 mm Recoilless Wea Sys	Small Arms	84 MM RECOIL SUB RD	192	0	0	0
	Small Arms	84 MM RECOILLESS TP	168	0	0	0

Maximum Annual Expenditure by Mission, Cont'd

Mission	CATEGORY	NOMENCLATURE	No Action	Alternative 1		Alternative 2
				current	future	
PROJECT COOLER	Precision Guided Weapons	AGM 154	0	2	0	8
SDB IOT&E	Bombs	JTV-39	0	8	0	32
SIIRCM TEST PROGRAM	Small Arms	CTG 7.62MM 4 BALL M80/1 TR M62	0	16,800	0	67,200
	Countermeasures	FLARE SURFACE TRIP M49A1	0	96	0	384
	Countermeasures	FLARE, IR CM, M206	0	450	0	1,800
Small Diameter Bomb SDD Test Program	Bombs	JTV-39	0	8	0	32
Special Projects Training Support	Explosive Ordnance	CAP,BLASTING	0	84	0	336
	Small Arms	CARTRIDGE, 40 MM	0	39,960	0	159,840
	Small Arms	CARTRIDGE, 5.56 MM	0	8,286	0	33,144
	Small Arms	CARTRIDGE, 7.62 MM	0	94,500	0	378,000
	Small Arms	CARTRIDGE, CALIBER .	0	89,994	0	359,976
	Explosive Ordnance	CHG DEMO M112 W/TAGGANT	0	4	0	16
	Explosive Ordnance	DET CORD	0	56	0	224
	Small Arms	GRN HAND SMOKE WHITE HC AN M8	0	270	0	1,080
SPT of Energetic Materials Testing	Bombs	BOMB GP 500LB MK82 MOD1	0	26	0	104
	High Explosive	MK-82, AFX-644-3 HE FILL	12	0	0	0
STINGER Missile Demonstration Support	Small Arms	CTG CAL .50 BALL M33	0	600	0	2,400
	Small Arms	CTG 25 MM TP PGU-23/U (SURROGATE)	0	4,200	0	16,800
	Rockets and Missiles	RCKT 2.75IN PRAC WHD INERT WTU-18 (SURROGATE)	0	40	0	160
	Rockets and Missiles	STINGER MSL (FIM-92A)	34	30	0	120
	Rockets and Missiles	STINGER MISSILE	0	8	0	32
	Rockets and Missiles	PG-7	0	6	0	24

Maximum Annual Expenditure by Mission, Cont'd

Mission	CATEGORY	NOMENCLATURE	No Action	Alternative 1		Alternative 2
				current	future	
	Rockets and Missiles	MICRO-DRONES, 6 FT WING SPAN	0	6	0	24
	Rockets and Missiles	MQM-107 RATO BOTTLE	0	1	0	4
	Rockets and Missiles	JAVELIN ANTI-TANK MISSILE	0	2	0	8
	Rockets and Missiles	2.75 IN RKT,M255A1 FLECHETTE	0	72	0	288
	High Explosive	C-4, 1 LB HE	0	2	0	8
STINGER/HELLFIRE Missile Training Support	Missiles	GUIDED MISSILE, SUBSYSTEM	0	12	0	48
	Missiles	STINGER MISSILE	0	64	0	256
	Missiles	STINGER MISSLE LL	0	22	0	88
	Missiles	STINGER MSL (FIM-92A)	10	0	40	160
	Missiles	STINGER RMP SYSTEM MOD 92D	0	24	0	96
23 Special Tactics Squadron	Small Arms	.50 CALIBER	0	0	1,500	6,000
	Small Arms	5.56 MM BALL	0	0	41,300	165,200
	Small Arms	7.62 MM LINKED	0	0	2,600	10,400
	Small Arms	40 MM PRACTICE GRENADE	0	0	682	2,728
TASKER	Missiles	AIM-120	0	3	0	12
	Missiles	AIM-120, INERT	0	6	0	24
	Missiles	AIM-120C	0	4	0	16
	Explosive Ordnance	CHG DEMO M112 W/TAGGANT	0	10	0	40
	Missiles	GUIDED MISSILE, INTE	0	3	0	12
TOP DOLLAR SPT	Small Arms	5.56 MM BALL	0	18,000	0	72,000
	Small Arms	7.62 MM BALL	0	9,000	0	36,000
	Small Arms	9 MM BALL	0	1,500	0	6,000
	Small Arms	9 MM BALL NATO	0	4,000	0	16,000
	High Explosive	90 MM HE	0	4,000	0	16,000
	Small Arms	SMOKE GRENADES, M18	0	20	0	80
U.S. Army Wall Experiments	Bombs (Live)	FERTILIZER BOMB 4800 LBS	0	4	0	16

Maximum Annual Expenditure by Mission, Cont'd

Mission	CATEGORY	NOMENCLATURE	No Action	Alternative 1		Alternative 2
				current	future	
U.S. Army GDLS Gun Turret Demo	Guns	105 MM TP M-724A1	0	50	0	200
U.S. Coast Guard Training Support	Small Arms	50 CALIBER	0	86	0	344
USAFAGOS SPT	Bombs	BDU-33	97	56	0	224
	Bombs	GBU-12 BDU50 INERT	0	8	0	32
Weapons Employment	Bombs	BDU-33	661	496	0	1,984
	Bombs	BMB PRAC 25LB BDU-33D/B	0	36	0	144
	Bombs	CTG SIGAL MK4 MOD 3	0	36	0	144
Other	Bomb	MK-16	2	0	0	0
	High Explosive	HIGH EXPLOSIVES	46	0	0	0
	High Explosive	HIGH EXPLOSIVES	42	0	0	0
	Unknown	M2A3	52	0	0	0
	Small Arms	.50 CALIBER BALL	4,000	0	0	0

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APPENDIX C

DESCRIPTION OF TESTING AND TRAINING ACTIVITIES

TRAINING ACTIVITIES

Air to Surface – Bomb Delivery Training

Air-to-surface bomb and missile training involves the release or launch of bombs or missiles over land. These weapons are scored either electronically on the ground or by the aircrew. Training altitudes may range from a few hundred feet to higher than 20,000 feet, and speeds range from 200 knots to near supersonic speeds. The inert bombs expended during training missions on Test Area (TA) B-75 have included the bomb dummy unit (BDU)-33D/B, guided bomb unit (GBU) -10, and BDU-50. Unlike the bombs previously mentioned, the GBU-10 is a "smart" bomb that is laser-guided to its target. For training purposes, the live warheads were removed from the four GBU-10s expended on TA B-75.

Air-to-Surface Gunnery Operations

Air-to-surface gunnery training involves rotary wing aircraft conducting live-fire door gunnery operations on selected targets owned by the Alabama Army National Guard (ALARNG). Currently, the ALARNG and the U.S. Coast Guard have a requirement to conduct this training. Munitions expended include 7.62 mm and .50 caliber against pop-up targets. In accordance with safety procedures, air-to-surface gunnery operations cannot occur at altitudes below 50 feet above ground level (AGL) without prior approval from Range Safety (AAC/SEU).

Surface-to-Air – Stinger Missile Training

The purpose of surface-to-air Stinger missile training is to train U.S. Army units in the correct and most effective way to use ground-launched missiles to strike targets. Currently, the Florida Army National Guard has a requirement to conduct pre-deployment training on an annual basis. Typically the missiles are launched from Avengers but they can be shoulder launched as well. Targets engaged are typically microsized drones which are less than 6 feet in length.

Surface-to-Surface – Small Arms Training

The 96th Ground Combat Training Squadron, the ALARNG, the 728th Air Control Squadron, and various units assigned to the Air Force Special Operations Command (AFSOC) have a requirement to conduct pre-deployment tactical weapons training on TA B-75.

In 1990, the ALARNG constructed an array of targets and firing lanes to support live-fire tank training. These targets include moving (pop up) infantry targets, stationary infantry targets, moving (pop up) armor targets, and stationary armor (pop up) targets located on B-75. After the events of 11 September 2001, the ALARNG reorganized and lost the tank mission. Their current mission is Calvary Reconnaissance and training requirements include both mounted (wheeled vehicles) and dismounted (foot) pre-mobilization validation of warrior tasks and battle drills. Training includes convoy training, mounted and dismounted land navigation training, mounted convoy tactical live-fire operations, and dismounted tactical live-fire operations. The mounted tactical live-fire operations consist of wheeled vehicles (Humvees) performing convoy operations, tactical maneuvers, and firing .50 caliber, 7.62 mm and/or 5.56 mm against the established target arrays. The dismounted operations consist of four-man teams (squads), conducting foot patrols and tactical maneuvers and engaging targets with 7.62 mm, 5.56 mm, 9 mm, and .45 cal.; 40-mm practice grenades may be utilized in training against armor targets.

Other units utilize these target sets in the same manner for pre-deployment tactical weapons training. Future requirements for the ALARNG may include launching the non-dud producing 40-mm MK-19 automatic grenade launcher.

Ground Operations – Munitions Training

Navy Explosive Ordnance Disposal (EOD) School Training

The Navy EOD School may have a future requirement to train on TA B-75 if the east-side ranges are not available to support their training. The mission of Navy EOD is to train technicians to detect, recover, identify, evaluate, render safe, and dispose of unexploded ordnance (UXO that constitutes a threat to people, material, installations, ships, aircraft, and operations. The Navy EOD School may utilize 500-pound and heavier bombs as part of their training. During EOD training, high-yield cutting-charges are placed with the target munitions and detonated. This results in a rupturing of the munitions casing and a low-order deflagration of the target munitions explosive components. The cutting-charge is designed to create horizontal blast pressures that penetrate and blow apart the bomb casings and burn the explosives at subsonic reaction rates, rather than stimulating high-order, high-yield detonations.

Air Operations Training

Air operations training includes any use of the airspace not previously described for training. Most common of these are range familiarization and diplomatic/VIP tours. Other types of air operations include photographic missions and battlefield support training missions. Air operations training missions on TA B-75 are summarized as follows:

- *Trainees*: 46th Test Wing (46 TW), AFSOC, 53rd Fighter Wing (53 FW) (Air Warfare Center [AWC]), and ALARNG
- *Typical Aircraft*: F-15s, F-16s, AC/MC/C-130s, Helicopters
- TA B-75 Expendables**:** *None*

Other Missions – Electronic Counter Measure Training

Electronic Counter Measure Training (ECM) training is almost identical to ECM testing, except that it is for training purposes rather than for testing new systems. Chaff and flares are expended from aircraft in some aspects of this training but none are recorded specifically on TA B-75. The exact number of missions that utilized the airspace over TA B-75 is not known; it is estimated at 300 missions per year. ECM training missions on TA B-75 are summarized as follows:

- Trainees: AFSOC
- Typical Aircraft: AFSOC assigned
- TA B-75 Expendables: No expendables were released specifically in TA B-75, but chaff and flares were expended over the western half of the range in what is called R-2915A (see Over Land Air Operations EBD), which encompasses TA B-75.

96th Civil Engineering Explosive Ordnance Disposal

Civil Engineering (CE) EOD

CE EOD is responsible for the cleanup and disposal of test area expendables. These operations include surface and near-surface ordnance cleanup and test area maintenance. Expendables include live weapons and inert training weapons which may contain a spotting charge that detonates on impact. Live ordnance is monitored closely, and all duds are disposed of in accordance with EOD technical guidance and mission test directives. Inert and spotting charge ordnance is either burnt or blown before being salvaged for disposal or recycling. Inert bombs such as the BDU-33 are normally burned or subjected to a small demolition charge to detonate unexploded spotting charges, rendering them safe for disposal or recycling.

EOD Training Operations

The 96 CES EOD unit performs qualification and proficiency training operations for assigned active-duty personnel. These operations include qualification to carry out TA cleanup and disposal activities in support of the Eglin Major Range Test Facility Base (MRTFB) as well as training for deployments. Training operations may include the use of EOD general demolition kits, remote firing devices, explosively actuated tools, small arms ammunitions and other munitions items up to and including hazard class/division 1.1 explosives. The number of training operations on TA B-75 is based on scheduling and availability. EOD may use a variety of target areas to perform this training. Training may also be conducted in conjunction with cleanup operations.

TESTING ACTIVITIES

Air-to-Surface – Bomb Testing

The testing air-to-surface mission capabilities of TA B-75 include the aircraft delivery of bomb (inert) and gun munitions. Missions usually involve the testing of a new weapon, new fuse, upgraded guidance or sensor system, or a new mix of weapons not currently authorized for carriage. In most cases, the warheads (i.e., inert weapons) are removed and replaced with a telemetry package that sends data back to the control facility for recording and analysis. Some air-to-surface testing evaluates new bombing computer software, not the actual weapon. These missions involve releasing or firing the bomb or missile from the aircraft and the weapon impacts the test area.

Surface-to-Air – Stinger Missile Testing

The surface-to-air mission capabilities testing of TA B-75 includes the shoulder or helicopter launching of missiles. The missiles launched from TA B-75 are in the shoulder-launched missile size (i.e., small surface-to-air missiles).

Surface-to-air testing evaluates a ground-launched missile's ability to strike its target. These missiles are shot at either a target-drone or the pole target (a target suspended by cables between

two poles) located at TT-10. Drones are almost always in the micro-drone size (approximately 6 feet).

Surface-to-Surface – Munitions Testing and Alabama Army National Guard Training

The surface-to-surface mission capabilities consist of munitions testing; during the baseline period, expenditures included small arms and gun ammunition, MK-22 rocket motors, and SABER charges. Surface-to-surface testing done on TA B-75 is one of two types: gun testing, which is testing either a gun or its ammunition over an extended distance, or testing a beach clearing system using rocket deployment.

Ground Operations – Munitions Testing

A wide variety of ground tests are performed at TA B-75. Testing includes evaluation of beach clearing ordnance and support for the High Explosive Research Division (HERD) work with insensitive explosives. Waterways Walls tests are also conducted by the U.S. Army Corps of Engineers Waterways Experiment Group (static munition detonations of C-4 explosive) and the U.S. Army Engineer Research, Development, and Engineering Center at Waterways Experiment Station, Structures Lab (detonations of ammonium nitrate fuel oil [ANFO]). Other ground testing done on TA B-75 includes hazard classification tests like "bullet impact and slow cook-off" testing. Ground test bomb detonations include high-yield surface and near-surface bomb detonations performed in testing bomb materials, fragmentation, blast pressure, and other variables.

Air Operations Testing

Air operations testing includes any use of the airspace not previously described for testing. The most common of these are "speed soaking" or sensor testing. During a speed-soaking test, the ordnance is carried on an aircraft and flown for an extended period of time through the entire speed range, usually including supersonic flight. A typical mission is three hours long and includes air refueling. Sensor testing is routinely accomplished over the entire land range airspace and involves evaluation of a sensor's ability to interpret what it senses. Other types of air operations include photographic missions and airborne pod instrumentation support missions. Air operation testing missions on TA B-75 are summarized as follows:

- *Testers*: 46th Test Wing and 53rd Wing (AWC)
- *Typical Aircraft*: F-15s, F-16s, and occasionally F-111s
- TA B-75 Expendables: *None*

Other Missions – Electronic Counter Measure Testing and Training

ECM testing evaluates the aircraft's self-protection system against "lock-on" from electronic tracking systems. The lock-on threats can come from electronic systems on land, sea, or air. Electronic systems testing includes radar software testing, radios, radar cross section, and any electronic system except ECM. These missions are usually flown at a low speed and moderate altitude, at 5,000 to 15,000 feet, but may be as low as 500 feet. Chaff and flares may be expended from the aircraft as part of this testing. Electronic countermeasure and electronic systems testing missions on TA B-75 are summarized as follows:

- *Testers*: 46th Test Wing and 53rd Wing (AWC)
- *Typical Aircraft*: F-15s, F-16s, occasionally E-3s, B-1s, MC-130s, EF-111s
- *TA B-75 Expendables:* No expendables were released specifically in B-75; however, chaff and flares were expended over the western half of the range in what is called R-2915A (see *Overland Air Operations EBD*), which encompasses TA B-75.

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APPENDIX D

SOILS

SOILS

Lakeland Sands

The Lakeland Sand series covers approximately 98 percent of TA B-75's land mass. These are very deep, excessively drained, permeable soils that formed from thick, sandy sediments. These soils are abundant on both level and steep uplands and can be up to 80 inches in depth. Slope coverage of the Lakeland Series on the test area is 3,323 acres of 0 to 5 percent slopes, 160 acres of 5 to 12 percent slopes, and 8 acres of 12 to 30 percent slopes. Lakeland sands vary in acidity from medium to very strong, resulting in varying soil colors ranging from dark, grayish brown, to yellowish-brown (USDA, 1995). Lakeland Sand generally has a moderate to high erosion susceptibility due to the high sand content. However, in areas where the soils are mucky, it is less likely to erode since mucks are composed of organic matter and clay. Variation of sediment size with the addition of clay and organic matter helps create soil stability.

Chipley and Hurricane Soil Series

The Chipley and Hurricane soil series frequently occur in tandem and have similar physical and chemical characteristics. Wetlands in the north and east portions of the test area, which contribute to water storage and transport, occur in this soils series. This deep, somewhat poorly drained to rapidly permeable soil formed in sandy marine sediments and occupies level to gentle slopes (generally less than 1 percent) on low ridges and terraces. The seasonally high water table is at a depth of 20 to 45 inches.

Foxworth Series

This soil consists of very deep, moderately well drained to very rapidly permeable soils that formed in sandy marine or eolian sediments. The soil serves as the outer, transitional boundary of the wetlands complexes located in the north and east portions of the test area. It occupies broad, nearly level to gentle slopes ranging from 0 to 5 percent. The high water table normally occurs within about 40 inches of the soil's surface during winter and early spring.

Rutlege Series

This very deep, poorly drained to very poorly drained, rapidly permeable soil was formed in the sandy marine sediments of terrace depressions. The soil, as the hydric component of the wetlands found in the test area, has a dark surface layer, sandy subsoil coated with organic matter, and is saturated or ponded.

Troup Loamy Sand

The Troup series consists of well-drained, moderately permeable soils that occur on level to steep upland slopes. Troup soils do not have a water table within a depth of 80 inches. Troup sands are characteristically highly acidic and contain a higher organic level than the above mentioned soils.

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APPENDIX E

BIOLOGICAL RESOURCES

BIOLOGICAL RESOURCES

ECOLOGICAL ASSOCIATIONS

Sandhills Ecological Association

The Sandhills Ecological Association encompasses approximately 502 acres (12-percent) of Test Area (TA) B-75 and is the largest ecological association found on TA B-75. Longleaf Pine Sandhills are characterized by an open, savanna-like structure with a moderate to tall canopy of longleaf pine, a sparse midstory of oaks and other hardwoods, and a diverse groundcover composed mainly of grasses, forbs, and low stature shrubs. The structure and composition was maintained by frequent fires, (every three to five years), which controlled hardwood, sand pine and titi encroachment.

Longleaf Pine Sandhills consist of a high diversity of species adapted to fire and the heterogeneous conditions that fires create. Variation within the sandhills is recognized by two associations differing in the dominance of grass species (wiregrass versus bluestem). Sandhills are often associated with and grade into scrub, upland pine forest, xeric hammock or slope forests. Associated trees include longleaf pine turkey oak, longleaf pine-xerophytic oak, longleaf pine-deciduous oak or high pine (U.S. Air Force, 2007). The functional significance of the Sandhill ecological association is to provide maintenance of regional biodiversity. Additionally, the sandhills, due to their wide coverage on Eglin, are the ecological association across which fire carries into the other imbedded fire-dependent systems. Eglin AFB is the largest and least fragmented single longleaf pine ownership in the world, and has the best remaining old growth longleaf pine. Seepage slopes are a common embedded wetland feature found within Eglin's sandhill matrix.

Wetland/Riparian Ecological Association

Wetlands and Riparian ecological associations on Eglin Air Force Base (AFB) can be divided into the following categories: (1) wetlands, which are dominated by plants adapted to anaerobic substrate conditions imposed by saturation or inundation for more than 10-percent of the growing season; (2) lacustrine wetlands that occur in nonflowing wetlands of natural depressions; and (3) riverine communities, which are natural, flowing waters from their source to the downstream limits of tidal influence and are bounded by channel banks. The above categories are further broken down into the following natural community types.

Floodplain wetlands have alluvial sand or peat substrates associated with riverine natural communities and are subject to flooding but not permanent inundation.

- Bottomland forest — Bottomland forest occurs on low-lying flatlands, usually bordering streams with distinct banks, where water rarely inundates the forest, such as areas along the Yellow River. On Eglin, these communities are also found on low terraces along the larger streams, such as Alaqua Creek.
- Floodplain forest — This term is used to designate river bottoms and low creek bottoms. In swamps with a recent fire history, the common tree is the black titi.

Basin wetlands are shallow, closed basin with an outlet usually only in time of high water. Bottom substrate is typically peat or sand and is usually inundated. Basin wetland vegetation is woody and/or herbaceous.

- Depression marsh - These systems are shallow, usually rounded depressions in sand substrate with herbaceous vegetation often in concentric bands. Peaty soil accumulates in the deepest sections where water is most permanent.
- River floodplain lake - Fresh water ponds support a variety of aquatic vegetation. Not all ponds on the Reservation support the same vegetation.
- Sandhills upland lake - Shallow, rounded depressions, sandy bottom, low nutrient.

Riparian zones may be classified into the following ravine natural community types.

- Alluvial stream – Clay and silt carrying, larger streams, perennial (Yellow River). Alluvial streams are characterized as perennial or intermittent seasonal watercourses originating in high uplands that are primarily composed of sandy clays and clayey–silty sands. Surface runoff generally predominates over subsurface drainage.
- Blackwater stream – Blackwater streams are characterized as perennial or intermittent seasonal water courses originating deep in sandy lowlands where extensive wetlands with organic soils function as reservoirs, collecting rainfall and discharging it slowly to the stream. The dark, tea-colored water typical of blackwater streams are laden with tannins, particulates, dissolved organic matter, and iron derived from drainage through swamps and marshes.
- Seepage stream – Seepage streams are characterized as perennial or intermittent seasonal water courses, originating from shallow ground waters that have percolated through deep, sandy, upland soils. These streams are typically clear to lightly colored and are relatively short, shallow, and narrow.

Table E-1 shows the type of Wetlands/Riparian ecological associations found on or adjacent to Eglin AFB. The Wetland/Riparian Ecological Association accounts for approximately 1.9 acres of TA B-75.

Table E-1. Wetland Types by Wetland/Riparian Ecological Association on or Adjacent to Eglin AFB

Type of Wetlands	Source of Hydrology	Substrate	Vegetation	Functional Significance
Depression Wetlands	Groundwater or rainwater	Peat or sand	Woody and/or herbaceous	Maintains regional biodiversity Floodwater storage Filters pollutants Maintains water quality
Seepage Slopes	Down slope seepage (sheetflow)	High in clay	Herbaceous	Rare habitats High biodiversity
Floodplain Wetlands	Rivers, streams, and creeks	Peat or sand	Woody and/or herbaceous	Maintains regional biodiversity Floodwater storage Wildlife corridors Maintains water quality

Source: U.S. Air Force, 2007

Flatwoods Ecological Association

TA B-75 supports approximately 9 acres of flatwoods ecological association. Pine flatwoods occur on flat, moderately well drained sandy soils with varying levels of organic matter, often underlaid by a hard pan. While the canopy consists of slash pine and longleaf pine, the understory varies greatly from shrubby to an open diverse understory of grasses and herbs. The primary environmental factors controlling vegetation type are soil moisture (soil type and depth to groundwater) and fire history. The average fire frequency in flatwoods is one to eight years, with nearly all of the plants and animals inhabiting this community adapted to recurrent fires. Home to numerous rare and endangered plants and animals, the Flatwoods Matrix plays a significant role in maintaining regional biodiversity, Eglin's more than 300 acres of old growth flatwoods are among the last remaining of such high quality.

OTHER LAND USES

Open Grasslands/Shrublands

Open Grasslands/Shrublands are the largest land use area found on TA B-75 and comprise approximately 3,405 acres or 83 percent of the TA. The Open Grasslands/Shrublands occurs in areas of heavily disturbed Sandhills, Flatwoods, and Wetlands/Riparian ecological sites (U.S. Air Force, 2003). This habitat predominantly occurs within the test areas on Eglin AFB. The open grassland/shrubland association is characterized by grasses and low shrubs and is maintained with machinery or fire that removes or prevents future growth. Riparian zones are found throughout these areas.

Urban/Landscaped Areas

TA B-75 contains approximately 165 acres of urban/landscaped areas. Eglin AFB currently has approximately 46,000 acres of semi-improved areas and 14,000 acres of improved areas. Bahia grass (*Panicum notatum*) is the primary turf grass that is used in the semi-improved areas while St. Augustine grass (*Stenotaphrum secundatum*) and Centipede grass (*Eremochloa ophiuroides*) are the primary turf grasses used in the improved areas. Ground maintenance encourages low-maintenance landscaping and uses native plants whenever possible (U.S. Air Force, 2007).

SENSITIVE SPECIES

Eastern Indigo Snake (*Drymarchon corais couperi*)

The federally threatened eastern indigo snake is the largest nonvenomous snake in North America and can grow up to 125 inches in length. The primary reason for its listing is population declines resulting from habitat loss and fragmentation. Movement along travel corridors between seasonal habitats also exposes the snake to danger from increased contact with humans. The snake frequents flatwoods, hammocks, stream bottoms, canebrakes, riparian thickets, and high ground with deep, well drained to excessively drained, sandy soils. Habitat preferences vary seasonally. Xeric Sandhill winter dens are used from December to April; from May to July they shift from winter dens to summer territories; from August through November they are frequently located in shady creek bottoms.

The indigo snake is strongly associated with gopher tortoise burrows. They use abandoned burrows in winter and spring for egg laying, shedding, and protection from dehydration and temperature extremes. They also use stump holes, armadillo and gopher holes, and other wildlife ground cavities.

Red-Cockaded Woodpecker (*Picoides borealis*)

The red-cockaded woodpecker (RCW) primarily inhabits the interstitial areas of the Eglin Reservation, although RCW cavity trees can be found on some test areas as well. On Eglin AFB, the RCW typically inhabits mature, open stands of longleaf pine. The RCW does not migrate and maintains year-round territories near nesting and roosting trees. An RCW cluster typically encompasses about 10 acres with most cavity trees within a 1,500-foot diameter circle. The RCW has shown some preference for mature longleaf pine over other pine species as a cavity tree with the average age of longleaf pines in which new cavities have been excavated being 95 years. Currently, 110,834 acres of the interstitial area on Eglin AFB is designated as RCW foraging habitat.

The woodpeckers primarily feed on spiders, ants, cockroaches, centipedes, and insect eggs and larvae that are excavated from trees. Dead, dying, and lightning-damaged trees that are infested with insects are a preferred feeding source. High-quality RCW forage habitat consists of open pine stands with tree diameter at breast height averaging 9 inches and larger. The birds forage in intermediate aged (30 years old) and older pine stands, which also provide an important source of future trees for the construction of cavities. As a result of active management, RCW populations on Eglin have continued to increase. Since 1994 the entire population size has been estimated once each year. In 2008, the population consisted of 390 active clusters and 347 potential breeding groups.

Figure E-1 outlines this increase in population trends on Eglin AFB.

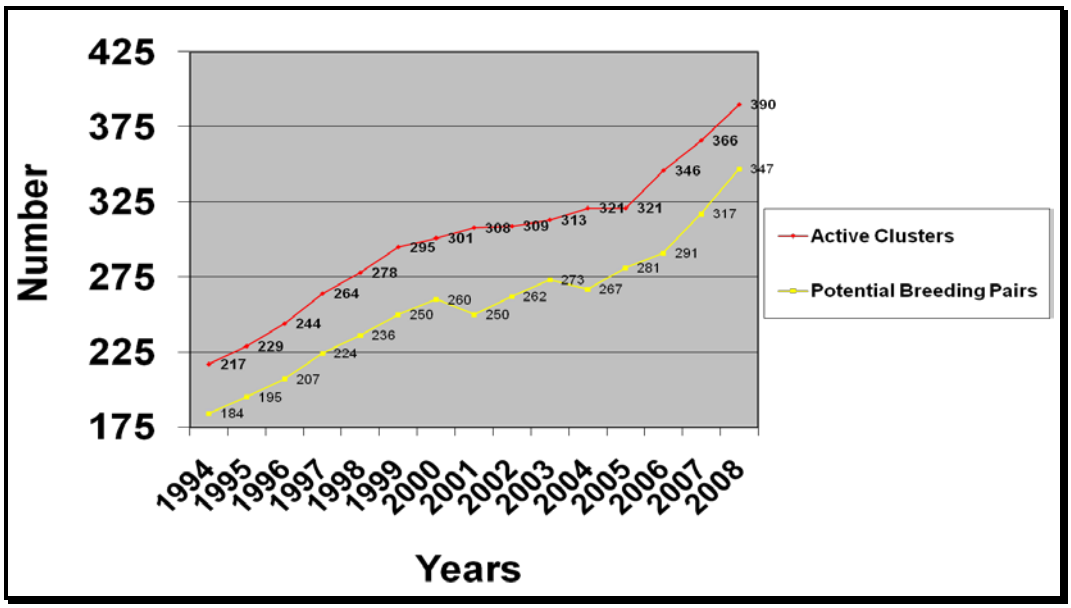

Figure E-1. Eglin RCW Population Trends from 1994–2008

Reticulated Flatwoods Salamander (*Ambystoma bishopi*)

The reticulated flatwoods salamander is listed as federally endangered and is a state species of special concern. Based on molecular and morphological analyses, Pauly et al. (2007) proposed the separation of the flatwoods salamander into two species. The division lies along the Apalachicola–Flint Rivers with reticulated flatwoods salamanders (*Ambystoma bishopi*) inhabiting areas to the west and frosted flatwoods salamanders (*A. cingulatum*) ranging to the east of the rivers. There are 18 known breeding ponds for the reticulated flatwoods salamander on the Eglin Range. Additionally, the Eglin Range supports approximately 17,000 acres of potential salamander habitat in mesic flatwoods. On 10 February 2009 the USFWS issued a notification in the *Federal Register* that no critical habitat would be designated for the reticulated flatwoods salamander on Eglin AFB (*Federal Register*, 2009).

Optimal habitat for this small mole salamander is open, mesic (moderately wet) woodlands of longleaf or slash pine flatwoods maintained by frequent fires and that contain shallow, ephemeral wetland ponds. Males and females migrate to these ephemeral ponds during the cool, rainy months of October through December. The females lay their eggs in vegetation at the edges of the ponds. Flatwoods salamanders may disperse long distances from breeding sites to upland sites where they live as adults (U.S. Air Force, 2006).

The primary threat to the flatwoods salamander is loss of mesic habitat through the filling in of wetlands and other alterations to the landscape hydrology. Flatwoods salamander habitat is also threatened by the introduction of invasive, non-native species. Flatwoods salamanders and their active breeding wetlands both appear to have declined in number since the original Eglin surveys in 1993 and 1994. This is possibly due in part to several years of drought in the late 1990s and early 2000s. Wetlands used for breeding may not have remained wet long enough for larvae to complete metamorphosis if rainfall amounts were not sufficient. This has resulted in little population recruitment over the last decade at Eglin's wetlands (U.S. Air Force, 2006).

The USFWS guidelines in the *Federal Register*, dated 1 April 1999, establish a 450-meter (1,476-foot) buffer area from the wetland edge of confirmed breeding ponds. Within the buffer area, the guidelines restrict ground-disturbing activities in order to minimize the potential for direct impacts to salamanders, the introduction and spread of invasive non-native plant species, and alterations to hydrology and water quality.

Gopher Tortoise (*Gopherus polyphemus*)

The gopher tortoise is a state-threatened species. The 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 sandy soils, open canopy with plenty of 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 species, including the federally listed eastern indigo snake (U.S. Air Force, 2006).

Florida Black Bear (*Ursus americanus floridanus*)

The Florida black bear was proposed for federal listing in 1990, however in 1998 the USFWS removed it from listing consideration. The Florida black bear is currently listed as a state-threatened species except in Baker and Columbia Counties and Apalachicola National Forest. Black bear populations are currently found in Florida, Georgia, and a small population in Alabama. Eglin AFB is considered to be the smallest population, with an estimated 60 to 100 individuals; however, Eglin's black bear population has shown signs of increase since the early 1990s (U.S. Air Force, 2002). Eglin's Natural Resources Section frequently receives reports of bear sightings and has responded to a growing number of bear–vehicle collisions and nuisance bear complaints. Most black bears on Eglin utilize the large swamps and floodplain forests in the southwest and northern portions of the Reservation. Black bear sightings have occurred in numerous locations throughout the Eglin Reservation, the majority of which have been within the interstitial areas.

Black bears eat a wide variety of food items. Their seasonal and annual diet consists primarily of fruits, acorns, beetles, and yellow jackets. Black bear in Florida breed in June–July. Implantation is delayed about four months. Gestation lasts 7 to 7.5 months (average 220 days) (U.S. Air Force, 2002). Females give birth every two years at most. Young are born in January-February, and stay with their mother until fall of the second year. Litter size is typically two to four cubs and females generally give birth at three to four years old (U.S. Air Force, 2002).

Southeastern American Kestrel (*Falco sparverius paulus*)

The Southeastern American kestrel is state-listed as threatened. The kestrel is a small falcon with pointed wings, a reddish back and tail, and two black stripes on each side of the white sides of its head. Kestrels are relatively common on Eglin AFB. The clutch size is three to seven (usually four to five). Incubation is conducted mainly by females, and usually lasts 29 to 31 days. Young are cared for by both parents and usually leave the nest in about 29 to 31 days. Kestrels will readily renest if the first clutch is lost.

Kestrels prefer open or partly open sandhills habitat. On Eglin, kestrels frequently utilize the cleared test areas as foraging areas and nest in cavities most often in longleaf pine trees. Cavity trees may be dead or alive. Kestrels frequently nest in old growth longleaf pines that contain cavities originally excavated by RCW. These cavities are usually enlarged by fox squirrels, pileated woodpeckers, or fire, making them large enough for kestrel use. Kestrels will readily use nest-boxes; however, Eglin appears to contain an abundance of suitable nesting habitat. Kestrels feed on insects (e.g., grasshoppers and crickets) and small vertebrates (e.g., snakes, lizards, birds, mice, and sometimes bats). They often utilize the tree line or utility poles adjacent to and within cleared test areas.

Gopher Frog (*Rana capito*)

The gopher frog is listed as a species of special concern by the State of Florida. These frogs are typically 2.5 to 4 inches long, excluding their legs, and have a wide body characterized by cream-colored, gray, or brown blotches (USFWS et al., 2003). Their chin and throat are spotted, and the belly is usually plain. Gopher frogs prefer habitats of the sandhills ecological association

and are typically found in dry, sandy uplands. They are nocturnal and spend most of the day in tunnels or gopher tortoise burrows. Breeding occurs in ponds and other permanent water bodies. The gopher frog is found throughout Florida, with the exception of the Everglades and the Keys (USFWS et al., 2003).

Florida Pine Snake (*Pituophis melanoleucus mugitus*)

The Florida pine snake has physically adapted to digging in the loose sand and also enters rodent burrows and occasionally gopher tortoise burrows. It is currently listed as a species of special concern by the State of Florida. Adults of this species are generally between 4 and 7 feet long, with an indistinct pattern of light brown blotches with a rusty background (USFWS et al., 2003). The Florida pine snake prefers sandhills, sand pine scrub, and pastures with dry, sandy soils and open canopies. They are found throughout most of the state, however are absent from the Keys. Pine snake habitat is best managed by maintaining gopher tortoise populations and by keeping soil and ground disturbance to a minimum.

RARE PLANT SPECIES

Hairy Wild Indigo (*Baptisia calycosa var villosa*)

Hairy wild indigo is typically found in dry sandy soil, including sandhills. Habitat may also include pine flatwoods. Hairy wild indigo is a threatened species in Florida.

Pineland Hoary-pea (*Tephrosia mohri)*

Pineland hoary-pea typically occurs in the driest portions of longleaf pine and turkey oak sandhills. This species is listed as threatened in Florida.

Baltzell's Sedge (*Carex baltzelli*)

Baltzell's sedge typically occurs in moist, well-drained, shady, steep ravines of beech-magnolia/longleaf pine-turkey oak forests. The species is listed as threatened in Florida.

Curtiss' Sandgrass (*Calamovilfa curtissi*)

Curtiss' sandgrass exhibits great vigor in response to frequent fires that control shrub encroachment within the Flatwoods ecological association. The species is specifically found in wet prairies, wet flatwoods, and the edges of dome swamps. Curtiss' sandgrass is a threatened species in Florida.

Arkansas Oak (*Quercus arkansana*)

Arkansas oak is often found in sandy or sandy clay uplands, or in upper ravine slopes near stream heads in deciduous woods. Arkansas oak is a threatened species in Florida.

Ashe's Magnolia (*Magnolia ashei*)

Ashe's magnolia typically occurs in the hardwood or mixed pine-hardwood forests of ravine slopes, bluffs, and narrow creek floodplains. It is occasionally also found on level uplands. This species prefers the upper regions of steep spring-head ravines. Soils in preferred areas tend to be moist sandy loams. Ashe's magnolia is an endangered species in Florida.

Silky Camellia (*Stewartia malacodendron*)

Silky camellia prefers well-drained soils. The species is listed as endangered in Florida.

MIGRATORY BIRDS

The Migratory Bird Treaty Act (16 USC 703-712; 1997-Supp) and EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds, protect migratory birds and their habitats and establish a permitting process for legal taking. 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. For normal and routine operations such as installation support functions, actions of the DoD may not result in pursuit, hunting, taking, capturing, killing, possession, or transportation of any migratory bird, bird part, nest, or egg thereof, except as permitted. The DoD must address these routine operations through the Memorandum of Understanding (MOU) developed in accordance with EO 13186 (DoD and USFWS, 2006). Under the 2003 National Defense Authorization Act, the Armed Forces are exempted from the incidental taking of migratory birds during military readiness activities, except in cases where an activity would likely cause a significant adverse effect to the population of a migratory bird species. As detailed in the final rule in the *Federal Register* (50 Code of Federal Regulations [CFR] Part 21), 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 (*Federal Register*, 2007).

Migratory birds that have the potential to occur on or near TA B-75 include the federally endangered RCW and the state-threatened Southeastern American kestrel.

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APPENDIX F

COASTAL ZONE MANAGEMENT ACT CONSISTENCY DETERMINATION

FEDERAL AGENCY COASTAL ZONE MANAGEMENT ACT (CZMA) CONSISTENCY DETERMINATION

Introduction

This document provides the State of Florida with the U.S. Air Force's Consistency Determination under CZMA Section 307 and 15 Code of Federal Regulations (CFR) Part 930 sub-part C. The information in this Consistency Determination is provided pursuant to 15 CFR Section 930.39 and Section 307 of the CZMA, 16 United States Code (USC) Section 1456, as amended, and its implementing regulations at 15 CFR Part 930.

This federal consistency determination addresses the Proposed Action associated with test and training activities on Test Area (TA) B-75, Eglin Air Force Base (AFB), Florida (Figure F-1).

Proposed Federal agency action:

The Proposed Action would authorize the current level of activity at TA B-75 and foreseeable future activities, plus a 300-percent increase in mission activity, and would include avoidance and minimization measures as part of the proposed action. A 300-percent increase was chosen as a likely maximum surge increase in military testing and training during a national defense contingency.

The region of influence (ROI) for this analysis is TA B-75 and a 1-mile buffer around the test area. TA B-75 is located on the western side of the Eglin Range Complex in Okaloosa and Santa Rosa Counties, about 15 miles northwest of Eglin Main Base (Figure F-2). TA B-75 is approximately 4 miles long and 2 miles wide.

The mission activities that are included are those events that originate and/or terminate on TA B-75. TA B-75 supports a variety of testing and training activities that include:

Air-to-Surface – Bomb Delivery Training

Air-to-surface bomb and missile training involves the release or launch of bombs or missiles over land. These weapons are scored either electronically on the ground or by the aircrew. Training altitudes may range from a few hundred feet to higher than 20,000 feet, and speeds range from 200 knots to near supersonic speeds. The inert bombs expended during training missions on TA B-75 have included the bomb dummy unit (BDU)-33D/B, guided bomb unit (GBU)-10, and BDU-50. Unlike the bombs previously mentioned, the GBU-10 is a "smart" bomb that is laser-guided to its target. For training purposes, the live warheads were removed from the four GBU-10s expended on TA B-75.

Air-to-Surface Gunnery Training Operations

Air-to-surface gunnery training involves rotary wing aircraft conducting live-fire door gunnery operations on selected targets. Munitions expended include 7.62 mm and .50 caliber against pop-up targets at altitudes not to exceed 50 feet.

Surface-to-Air Stinger Missile Training

The purpose of surface-to-air Stinger missile training is to train U.S. Army units in the correct and most effective way to use ground-launched missiles to strike targets. Targets engaged are typically micro-sized drones which are less than 6 feet in length.

Surface-to-Surface Small Arms Training

Training includes convoy training, mounted and dismounted land navigation training, mounted convoy tactical live-fire operations, and dismounted tactical live-fire operations. The mounted tactical live-fire operations consist of wheeled vehicles (Humvees) performing convoy operations, tactical maneuvers, and firing .50 caliber, 7.62 mm, and/or 5.56 mm against the established target arrays. The dismounted operations consist of four-man teams (squads), conducting foot patrols and tactical maneuvers and engaging targets with 7.62 mm, 5.56 mm, 9 mm, .45 cal.; 40-mm practice grenades may be utilized in training against armor targets. Other units utilize these target sets in the same manner for pre-deployment tactical weapons training. Future requirements for the ALARNG may include launching the non-dud producing 40-mm MK-19 automatic grenade launcher.

Ground Operations – Munitions Training

The Navy Explosive Ordnance School (EOD) School may have a future requirement to train on TA B-75 if the east-side ranges are not available to support their training. The mission of Navy EOD is to train technicians to detect, recover, identify, evaluate, render safe, and dispose of unexploded ordnance (UXO) that constitutes a threat to people, material, installations, ships, aircraft, and operations. The Navy EOD School may utilize 500-pound and heavier bombs as part of their training. During EOD training, high-yield cutting charges are placed with the target munitions and detonated. This results in a rupturing of the munitions casing and a low-order deflagration of the target munitions explosive components. The cutting-charge is designed to create horizontal blast pressures that penetrate and blow apart the bomb casings and burn the explosives at subsonic reaction rates, rather than stimulating high-order, high-yield detonations.

Air Operations Training

Air operations training includes any use of the airspace not previously described for training. Most common of these are range familiarization and diplomatic/VIP tours. Other types of air operations include photographic missions and battlefield support training missions. Typical aircraft include F-15s, F-16s, AC/MC/C-130s, and helicopters.

Other Missions – Electronic Counter Measure Training

ECM training is almost identical to ECM testing, except that it is for training purposes rather than for testing new systems. Chaff and flares are expended from aircraft in some aspects of this training but none are recorded specifically on TA B-75. The exact number of missions that utilized the airspace over TA B-75 is not known; it is estimated at 300 missions per year. ECM training missions on TA B-75 are summarized as follows:

Civil Engineering (CE) EOD

CE EOD is responsible for the cleanup and disposal of test area expendables. These operations include surface and near-surface ordnance cleanup and test area maintenance. Expendables include live weapons and inert training weapons which may contain a spotting charge that detonates on impact. Live ordnance is monitored closely, and all duds are disposed of in accordance with EOD technical guidance and mission test directives. Inert and spotting charge ordnance is either burnt or blown before being salvaged for disposal or recycling. Inert bombs are normally burned or subjected to a small demolition charge to detonate unexploded spotting charges, rendering them safe for disposal or recycling.

EOD Training Operations

The 96 CES EOD unit performs qualification and proficiency training operations for assigned active-duty personnel. These operations include qualification to carry out test area cleanup and disposal activities in support of the Eglin Major Range Test Facility Base (MRTFB) as well as training for deployments. Training operations may include the use of EOD general demolition kits, remote firing devices, explosively actuated tools, small arms ammunitions and other munitions items up to and including hazard class/division 1.1 explosives. The number of training operations on TA B-75 is based on scheduling and availability. EOD may use a variety of target areas to perform this training. Training may also be conducted in conjunction with cleanup operations.

Air-to-Surface – Bomb Testing

The testing air-to-surface mission capabilities of TA B-75 include the aircraft delivery of bomb (inert) and gun munitions. Missions usually involve the testing of a new weapon, new fuse, upgraded guidance or sensor system, or a new mix of weapons not currently authorized for carriage. In most cases, the warheads (i.e., inert weapons) are removed and replaced with a telemetry package that sends data back to the control facility for recording and analysis. Some air-to-surface testing evaluates new bombing computer software, not the actual weapon. These missions involve releasing or firing the bomb or missile from the aircraft and the weapon impacts the test area.

Surface-to-Air – Stinger Missile Testing

The surface-to-air mission capabilities testing of TA B-75 includes the shoulder or helicopter launching of missiles. The missiles launched from TA B-75 are in the shoulder-launched missile size (i.e., small surface-to-air missiles). Surface-to-air testing evaluates a ground-launched missile's ability to strike its target. These missiles are shot at either a target-drone or the pole target (a target suspended by cables between two poles) located at TT-10. Drones are almost always in the micro-drone size (approximately 6 feet).

Surface-to-Surface – Munitions Testing and Alabama Army National Guard Training

The surface-to-surface mission capabilities consist of munitions testing; during the baseline period, expenditures included small arms and gun ammunition, MK-22 rocket motors, and SABER charges. Surface-to-surface testing done on TA B-75 is one of two types: gun testing, which is testing either a gun or its ammunition over an extended distance, or testing a beach clearing system using rocket deployment.

Ground Operations – Munitions Testing

A wide variety of ground tests are performed at B-75. Testing includes evaluation of beach clearing ordnance and support for the High Explosive Research Division (HERD) work with insensitive explosives. Waterways Walls tests are also conducted by the U.S. Army Corps of Engineers Waterways Experiment Group (static munition detonations of C-4 explosive) and the U.S. Army Engineer Research, Development and Engineering Center at Waterways Experiment Station, Structures Lab (detonations of ammonium nitrate fuel oil [ANFO]). Other ground testing done on TA B-75 includes hazard classification tests like "bullet impact and slow cook-off" testing. Ground test bomb detonations include high-yield surface and near-surface bomb detonations performed in testing bomb materials, fragmentation, blast pressure, and other variables.

Air Operations Testing

Air operations testing includes any use of the airspace not previously described for testing. The most common of these are "speed soaking" or sensor testing. During a speed-soaking test, the ordnance is carried on an aircraft and flown for an extended period of time through the entire speed range, usually including supersonic flight. A typical mission is three hours long and includes air refueling. Sensor testing is routinely accomplished over the entire land range airspace and involves evaluation of a sensor's ability to interpret what it senses. Other types of air operations include photographic missions and airborne pod instrumentation support missions.

Other Missions – Electronic Counter Measure Testing and Training

ECM testing evaluates the aircraft's self-protection system against "lock-on" from electronic tracking systems. The lock-on threats can come from electronic systems on land, sea, or air. Electronic systems testing includes radar software testing, radios, radar cross section, and any electronic system except ECM. These missions are usually flown at a low speed and moderate altitude, at 5,000 to 15,000 feet, but may be as low as 500 feet. Chaff and flares may be expended from the aircraft as part of this testing.

Additional information on TA B-75 facilities, target areas, and instrumentation are provided in the *Test Area B-75 Final Environmental Baseline Document*, Chapter 2, Mission Summary *and TA-75 REA*, Chapter 2, Alternatives and Appendices B and C.

Federal 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 CFR § 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 CFR § 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.

Table F-1. 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.	Authorizes the Bureau of Beaches and Coastal Systems within FDEP to regulate construction on or seaward of the states' beaches.
Chapter 163, Part II *Growth Policy; County and Municipal Planning; Land Development Regulation*	The Proposed Action would not affect local government comprehensive plans.	Requires local governments to prepare, adopt, and implement comprehensive plans that encourage the most appropriate use of land and natural resources in a manner consistent with the public interest.
Chapter 186 *State and Regional Planning*	The Proposed Action would not affect state plans for water use, land development, or transportation.	Details state-level planning requirements. Requires the development of special statewide plans governing water use, land development, and transportation.
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.	Provides for planning and implementation of the state's response to, efforts to recover from, and the mitigation of natural and manmade disasters.
Chapter 253 *State Lands*	All activities would occur on federal property; therefore the Proposed Action would not affect state public lands.	Addresses the state's administration of public lands and property of this state and provides direction regarding the acquisition, disposal, and management of all state lands.
Chapter 258 *State Parks and Preserves*	The Proposed Action would not affect state parks, recreational areas and aquatic preserves.	Addresses administration and management of state parks and preserves.
Chapter 259 *Land Acquisition for Conservation or Recreation*	The Proposed Action would not affect tourism and/or outdoor recreation.	Authorizes acquisition of environmentally endangered lands and outdoor recreation lands.
Chapter 260 *Recreational Trails System*	The Proposed Action would not include the acquisition of land and would not affect the Greenways and Trails Program.	Authorizes acquisition of land to create a recreational trails system and to facilitate management of the system.

Table F-1. Florida Coastal Management Program Consistency Review, Cont'd

Statute	Consistency	Scope
Chapter 375 *Multipurpose Outdoor Recreation; Land Acquisition, Management, and Conservation*	The Proposed Action would not affect opportunities for recreation on state lands.	Develops comprehensive multipurpose outdoor recreation plan to document recreational supply and demand, describe current recreational opportunities, estimate need for additional recreational opportunities, and propose means to meet the identified needs.
Chapter 267 *Historical Resources*	Continued maintenance and upkeep of existing structures is required. If modification or demolition of facilities were to occur, the existing Cold War Era structures will require additional consideration. All actions must adhere to standards and guidelines outlines in the Eglin AFB Integrated Cultural Resources Management Plan (U.S. Air Force, 2004) and the previously developed Programmatic Agreement between the AAC, the Florida State Historic Preservation Officer (SHPO), and the Advisory Council on Historic Preservation (U.S. Air Force, 2003b). Continued coordination should occur with 96 CEG/CEVSH prior to future proposed activities. In the event that unknown cultural resources are discovered during a mission activity, all activity in the immediate vicinity must cease until the Base Historic Preservation Officer and 96 CEG/CEVSH have been notified and a determination of significance has been rendered. No adverse effects to cultural resources are expected from implementation of the Proposed Action. Therefore, the Proposed Action would be consistent with the State's policies concerning historical resource management.	Addresses 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.	Provides the framework for promoting and developing the 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 370 *Saltwater Fisheries*	The Proposed Action would not affect saltwater fisheries.	Addresses management and protection of the state's saltwater fisheries.

Table F-1. Florida Coastal Management Program Consistency Review, Cont'd

Statute	Consistency	Scope
Chapter 372 *Wildlife*	A 300-percent mission surge would increase the frequency, and in some cases the severity, of impacts to biological resources on and near TA B-75. Test Area B-75 mission operations have the potential to affect sensitive habitats and species through direct encounters, noise, chemical impacts, and habitat alteration. The management actions in Section 2.5 and 4.4 of the TA B-75 REA would serve to eliminate or minimize many of the potential impacts from TA B-75 activities. Overall impacts to biological resources would not be significant for the Proposed Action, and are not likely to adversely affect the red-cockaded woodpecker (RCW), reticulated flatwoods salamander, or eastern indigo snake. Eglin is conducting an ESA Section 7 consultation to address potential impacts to federally listed species. Eglin Natural Resources Section has determined that the Proposed Action may affect, but is not likely to adversely affect these species base on the implementation of the management requirements discussed in Section 4.4 of the TA B-75 REA. The Proposed Action would be consistent with the State's policies concerning the protection of wildlife and other natural resources.	Addresses the management of the wildlife resources of the state.
Chapter 373 *Water Resources*	Increased munitions expenditures would not result in metal concentrations in groundwater exceeding USEPA risk-based concentrations. Surface water resources are located at distances from targets sufficient to minimize potential for contaminant transport, and sedimentation due to erosion would be controlled by management requirements. Wetlands would not be impacted, and no actions would modify the floodplain. Eglin Water Resources (96 CEG/CEVCE) would ensure that any applicable permitting requirements would be satisfied in accordance with FAC. Therefore, the Proposed Action would be consistent with Florida's statutes and regulations regarding the water resources of the state.	Addresses the state's policy concerning water resources.
Chapter 376 *Pollutant Discharge Prevention and Removal*	Munition fragments and residues would be generated as a result of testing and training missions. Ordnance expenditures would increase threefold, therefore the release of hazardous chemicals would increase. Despite this, no Toxic Release Inventory thresholds would be exceeded and adverse impacts to the environment are not anticipated. Management practices would remain in place that assure testing and raining areas will be scanned for debris and duded munitions and that they would be removed. Any duded munitions or unexploded ordnance would be flagged and removed according to standard procedures.	Regulates transfer, storage, and transportation of pollutants, and cleanup of pollutant discharges.

Table F-1. Florida Coastal Management Program Consistency Review, Cont'd

Statute	Consistency	Scope
	Therefore, the Proposed Action would be consistent with Florida's statutes and regulations regarding the transfer, storage, or transportation of pollutants.	
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 oil and gas 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 effort in the state.
Chapter 403 *Environmental Control*	The increase in munitions expenditures would cause an increase in air emissions to the region that would be minimal and temporary. The pollutant that has the potential to emit the most is particulate matter. Emissions would consist of 2.4 percent and 1.5 percent of Okaloosa and Santa Rosa Counties respectively, which is within the 10-percent threshold. Comparing these emissions to the NAAQS, particulate matter is calculated at 48 micrograms per cubic meter for a 24-hour period and 9 micrograms per cubic meter annually. Both calculated concentrations are below the NAAQS and thus air emissions would have no adverse impacts on air quality from the proposed action. Therefore, the Proposed Action would be consistent with Florida's statutes and regulations regarding water quality, air quality, pollution control, solid waste management, or other environmental control efforts.	Establishes public policy concerning environmental control in the state.
Chapter 582 *Soil and Water Conservation*	The Proposed Action would not have any significant impacts to soils. Increased munitions expenditures would not result in metal concentrations in the soil exceeding USEPA risk-based concentrations. Increased munition training and foot and vehicle traffic could cause soil erosion, particularly on sparsely vegetated slopes. However, adherence to management practices would decrease erosion potential. Therefore, the Proposed Action would be consistent with the Florida's statutes and regulations regarding soil and water conservation efforts.	Provides for the control and prevention of soil erosion.

Figure F-1. Overview of Eglin AFB

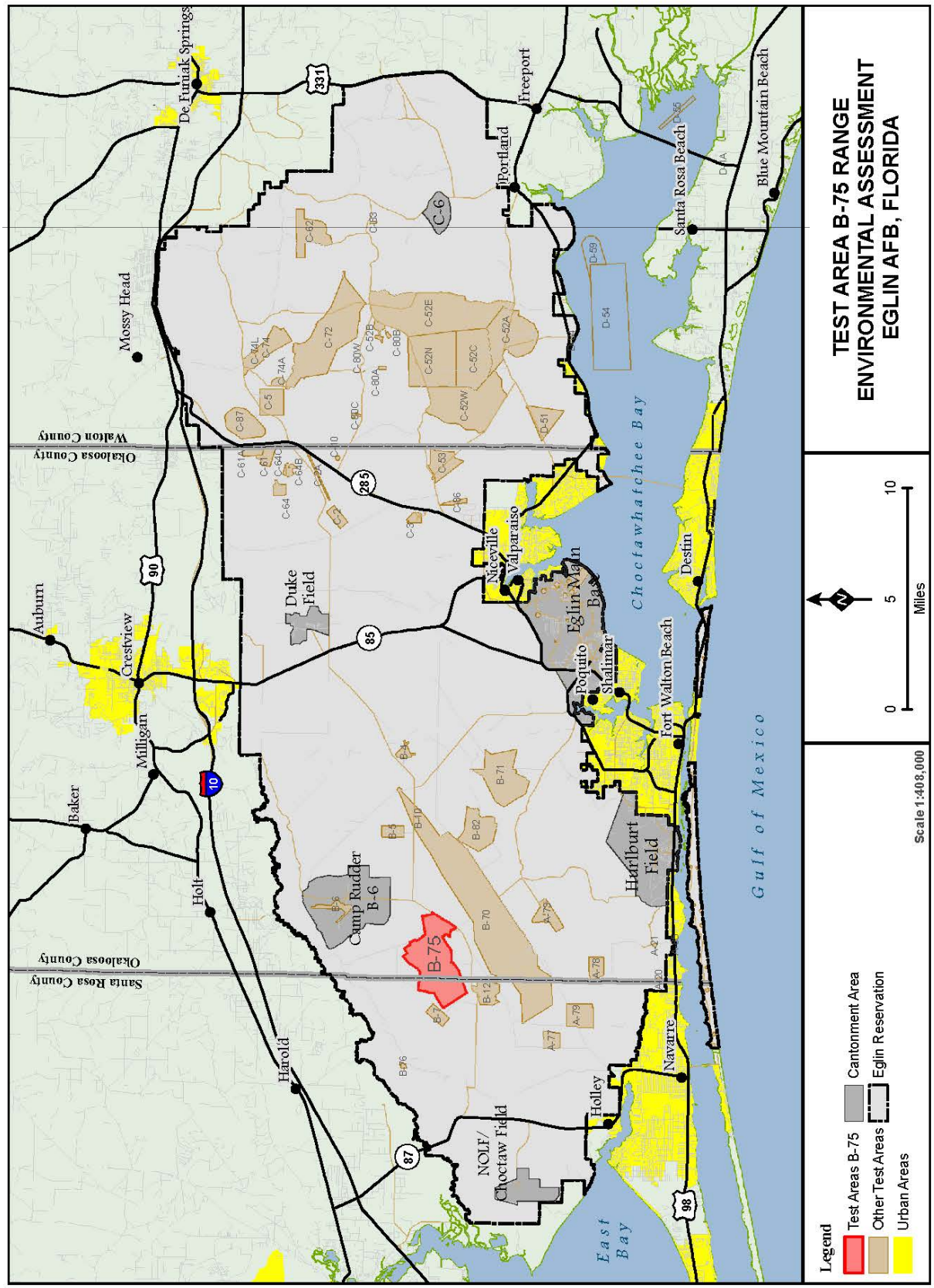

Figure F-2. Overview of TA B-75

APPENDIX G

BIOLOGICAL ASSESSMENT

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 96TH AIR BASE WING (AFMC)
EGLIN AIR FORCE BASE FLORIDA

Mr. Stephen M. Seiber
Chief, Natural Resources Section
96 CEG/CEVSN
501 De Leon Street, Suite 101
Eglin AFB FL 32542-5133

JUN - 9 2010

Dr. Donald Imm
U.S. Fish and Wildlife Service
1601 Balboa Avenue
Panama City FL 32405

Dear Dr. Imm:

The following information is being submitted to fulfill requirements under Section 7 of the Endangered Species Act (ESA). Briefly, this biological assessment addresses potential impacts to the red-cockaded woodpecker (RCW), the flatwoods salamander, the Eastern indigo snake, and three state-listed species from Test Area (TA) B-75 activities described in the Test Area B-75 Draft Range Environmental Assessment (REA), Eglin Air Force Base (AFB), Florida (U.S. Air Force, 2010).

Description of Proposed Action

The region of influence (ROI) for this analysis is TA B-75 and includes a one-mile buffer around the test area. TA B-75 is located on the western side of the Eglin Range Complex in Okaloosa and Santa Rosa Counties, about 15 miles northwest of Eglin Main Base (Figure 1). TA B-75 is approximately four miles long and two miles wide. The test area provides over six square miles of continuous land test area.

The mission activities included are those events that originate and/or terminate on TA B-75. The air operations that occur in the airspace overlying TA B-75 are not included as part of the scope for this Range Environmental Assessment (REA); the air operations are analyzed cumulatively in the Overland Air Operations REA. However, expendables that are released during air operations, as they impact TA B-75 and the vicinity, are included in this REA.

TA B-75 supports a variety of testing and training activities that include:

Air to Surface – Bomb Delivery Training

Air-to-surface bomb and missile training involves the release or launch of bombs or missiles over land. These weapons are scored either electronically on the ground or by the aircrew. Training altitudes may range from a few hundred feet to higher than 20,000

feet, and speeds range from 200 knots to near supersonic speeds. The inert bombs expended during training missions on Test Area (TA) B-75 have included the bomb dummy unit (BDU)-33D/B, guided bomb unit (GBU)-10, and BDU-50. Unlike the bombs previously mentioned, the GBU-10 is a "smart" bomb that is laser-guided to its target. For training purposes, the live warheads were removed from the four GBU-10s expended on TA B-75.

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Surface to Air - Stinger Missile Training

The purpose of surface-to-air Stinger missile training is to train U.S. Army units in the correct and most effective way to use ground-launched missiles to strike targets. Targets engaged are typically micro-sized drones which are less than six feet in length.

Surface to Surface – Small Arms Training

Training includes convoy training, mounted and dismounted land navigation training, mounted convoy tactical live-fire operations, and dismounted tactical live-fire operations. The mounted tactical live-fire operations consist of wheeled vehicles (Humvees) performing convoy operations, tactical maneuvers, and firing .50 caliber, 7.62 millimeters (mm) and/or 5.56 mm against the established target arrays. The dismounted operations consist of four man teams (squads), conducting foot patrols and tactical maneuvers and engaging targets with 7.62 mm, 5.56 mm, 9 mm, .45 cal. 40 mm practice grenades may be utilized in training against armor targets. Other units utilize these target sets in the same manner for pre-deployment tactical weapons training. Future requirements for the ALARNG may include launching the non-dud producing 40mm MK-19 automatic grenade launcher.

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Air operations training includes any use of the airspace not previously described for training. Most common of these are range familiarization and diplomatic/VIP tours. Other types of air operations include photographic missions and battlefield support training missions. Typical aircraft include F-15s, F-16s, AC/MC/C-130s, and helicopters.

Other Missions – Electronic Counter Measure Training

Electronic Counter Measure Training (ECM) training is almost identical to ECM testing, except that it is for training purposes rather than for testing new systems. Chaff and flares are expended from aircraft in some aspects of this training but none are recorded specifically on TA B-75. The exact number of missions that utilized the airspace over TA B-75 is not known; it is estimated at 300 missions per year. ECM training missions on TA B-75 are summarized as follows:

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CE EOD is responsible for the cleanup and disposal of test area expendables. These operations include surface and near-surface ordnance cleanup and test area maintenance. Expendables include live weapons and inert training weapons which may contain a spotting charge that detonates on impact. Live ordnance is monitored closely, and all duds are disposed of in accordance with EOD technical guidance and mission test directives. Inert and spotting charge ordnance is either burnt or blown before being salvaged for disposal or recycling. Inert bombs are normally burned or subjected to a small demolition charge to detonate unexploded spotting charges, rendering them safe for disposal or recycling.

EOD Training Operations

The 96 CES EOD unit performs qualification and proficiency training operations for assigned active-duty personnel. These operations include qualification to carry out TA cleanup and disposal activities in support of the Eglin Major Range Test Facility Base (MRTFB) as well as training for deployments. Training operations may include the use of EOD general demolition kits, remote firing devices, explosively actuated tools, small arms ammunitions and other munitions items up to and including hazard class/division 1.1 explosives. The number of training operations on TA B-75 is based on scheduling and availability. EOD may use a variety of target areas to perform this training. Training may also be conducted in conjunction with cleanup operations.

Air to Surface – Bomb Testing

The testing air-to-surface mission capabilities of TA B-75 include the aircraft delivery of bomb (inert) and gun munitions. Missions usually involve the testing of a new weapon, new fuse, upgraded guidance or sensor system, or a new mix of weapons not currently

authorized for carriage. In most cases, the warheads (i.e. inert weapons) are removed and replaced with a telemetry package that sends data back to the control facility for recording and analysis. Some air-to-surface testing evaluates new bombing computer software, not the actual weapon. These missions involve releasing or firing the bomb or missile from the aircraft and the weapon impacts the test area.

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The surface-to-air mission capabilities testing of TA B-75 includes the shoulder or helicopter launching of missiles. The missiles launched from TA B-75 are in the shoulder-launched missile size (i.e., small surface-to-air missiles). Surface-to-air testing evaluates a ground-launched missile's ability to strike its target. These missiles are shot at either a target-drone or the pole target (a target suspended by cables between two poles) located at TT-10. Drones are almost always in the micro-drone size (approximately 6 feet).

Surface-to-Surface – Munitions Testing and Alabama Army National Guard Training

The surface-to-surface mission capabilities consist of munitions testing; during the baseline period, expenditures included small arms and gun ammunition, MK-22 rocket motors, and SABER charges. Surface-to-surface testing done on TA B-75 is one of two types: gun testing, which is testing either a gun or its ammunition over an extended distance, or testing a beach clearing system using rocket deployment.

Ground Operations – Munitions Testing

A wide variety of ground tests are performed at B-75. Testing includes evaluation of beach clearing ordnance and support for the High Explosive Research Division (HERD) work with insensitive explosives. Waterways Walls tests are also conducted by the U.S. Army Corps of Engineers Waterways Experiment Group (static munition detonations of C-4 explosive) and the U.S. Army Engineer Research, Development and Engineering Center at Waterways Experiment Station, Structures Lab (detonations of ammonium nitrate fuel oil [ANFO]). Other ground testing done on TA B-75 includes hazard classification tests like "bullet impact and slow cook-off" testing. Ground test bomb detonations include high-yield surface and near-surface bomb detonations performed in testing bomb materials, fragmentation, blast pressure, and other variables.

Air Operations Testing

Air operations testing includes any use of the airspace not previously described for testing. The most common of these are "speed soaking" or sensor testing. During a speed-soaking test, the ordnance is carried on an aircraft and flown for an extended period of time through the entire speed range, usually including supersonic flight. A typical mission is three hours long and includes air refueling. Sensor testing is routinely accomplished over the entire land range airspace and involves evaluation of a sensor's

ability to interpret what it senses. Other types of air operations include photographic missions and airborne pod instrumentation support missions.

Other Missions – Electronic Counter Measure Testing and Training

ECM testing evaluates the aircraft's self-protection system against "lock-on" from electronic tracking systems. The lock-on threats can come from electronic systems on land, sea, or air. Electronic systems testing includes radar software testing, radios, radar cross section, and any electronic system except ECM. These missions are usually flown at a low speed and moderate altitude, at 5,000 to 15,000 feet, but may be as low as 500 feet. Chaff and flares may be expended from the aircraft as part of this testing.

Primary user groups include the 96th Security Forces Squadron Training Support, the Alabama Army National Guard (ALARNG), and the Joint Services Explosive Ordnance Disposal Training. Additional information on TA B-75 facilities, target areas, and instrumentation are provided in the *Test Area B-75 Final Environmental Baseline Document*, Chapter 2, Mission Summary (U.S. Air Force, 2007) *and TA-75 REA*, Chapter 2, Alternatives and Appendices B and C (U.S. Air Force, 2010). Issues related to ongoing maintenance activities, such as herbicide spraying and roller-drum chopping are not discussed in this BA.

The Proposed Action would authorize the current level of activity and foreseeable future activities, plus a 300 percent increase in mission activity (Table 1), and would include avoidance and minimization measures as part of the proposed action. A 300 percent increase was chosen as a likely maximum surge increase in military testing and training during a national defense contingency. The current level of activity is defined as the maximum annual expenditure for each type of expendable from FY1998 through FY2008; this approach accounts for periods of low or no activity of a certain mission. Future TA B-75 expenditures will include increased munitions expenditures associated with ground training activities from several new user groups including the 23rd Special Tactics Squadron (STS), the 1st Special Operations Support Squadron (1 SOSS), the 96th Ground Combat Training Squadron (96 GCTS), and the Joint Strike Fighter (JSF) (Walker, 2009; U.S. Air Force, 2008). The use of high explosives (HE) for testing or training on TA B-75 would be considered on a case-by-case basis and must be approved by the 46 TW in advance of mission activities.

Table 1. Maximum Annual Expendables for Test Area B-75 Under the Proposed Action

Expendable	Number Expended
Bombs	3600
Explosive Ordnance	491,428
Chaff	79,740
Flares	246,046
High Explosives	27,040
Lasers	72
Mines	4280
Missiles	1228
Mortars	72
Precision Guided Weapons	8
Rockets	1928
Small Arms	16,530,123
Smokes	1000

Avoidance and Minimization Measures for the Proposed Action

The following avoidance and minimization measures will reduce or eliminate impacts associated with the proposed action. These measures are part of the proposed action and will be implemented through the proposed action's initiation:

- Eglin AFB Wildfire Specific Action Guide Restrictions regarding forest fire danger ratings for pyrotechnics use will be adhered to.
- Per the Specific Action Guide for wildfire readiness, if Fire Danger is:
    - Moderate - No restrictions on pyrotechnics. A fire watch is required to be posted for a minimum of 20 minutes after pyrotechnics use 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 below 1000' AGL. Limit 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 allowed without prior approval from Wildland Fire Program Manager or designee at Eglin Natural Resources (Jackson Guard) (96 CEG/CEVSNP, 882-6233 or FAX 882-5321).

- Fire Danger can be determined by calling the dispatch office or on the Environmental Management website in the Fire Management Section.
- Immediately notify Eglin AFB Fire Department Dispatch of any wildfire.
- Release flares at altitudes that will ensure complete burnout prior to reaching the surface. Allow no deployment of flares when fire index presents an unacceptable hazard.
- Troops must avoid ground disturbing activities within 100 feet of streams and wetlands, and must stay off of steep slopes.
- Maintain a vegetated buffer between surface waters and bare soil testing areas.
- Do not establish any new cleared target areas within 200-feet of any natural water body.
- Detonations of explosives should not occur within 200-feet of water bodies.
- Immediately remove any ordnance that lands in streams bank areas and interior objectives, in accordance with Air Force regulations.
- Conduct target and ordnance debris removal and disposal of solid debris from blanks, chaff, smokes, and flares, in accordance with Air Force regulations.
- Employ bullet containment, lead projectiles management, and lead reclamation.
- Within the constraints of mission instrumentation and profile needs, relocate training targets (TT)-7 and TT-18 to positions less likely to impact sensitive slopes, and relocate small arms target berm site B-5 to an area less prone to surface water contamination.
- Vehicles should remain on roads or established tracks and corridors.
- Conduct groundwater quality sampling as necessary near any open detonation pit.
- Relocate targets to areas on the test area less prone to erosion impacts. Minimize the placement of target vehicles on sloped areas.
- Relocate individual test sites/targets frequently. Individual sites should be moved within the test area as often as possible to reduce the impact potential at any one location.
- Establish low growing grassland communities on severely disturbed areas susceptible to erosion, reduce the frequency of vegetation management practices, and incorporate erosion control practices as needed on adjacent areas.
- Maintain vigorous grassland buffers around existing target sites through fertility management.
- Reduce the gradients of severely eroding slopes to the degree possible and revegetate.

- Lime the very strongly acidic soils to a pH between 6.5 and 7, and add mature municipal compost, or incorporate clay materials to minimize the mobility and availability of metals in the soil.
- Do not conduct military activities within areas designated as research plots or restoration sites unless the 96 CEG/CEVSN has given specific written authorization.
- Tree cutting is limited to scrub oak and sand pine. Do not cut down longleaf pine for any reason.
- Areas in which small arms with blank ammunition is used must be policed to pick up debris. Blank cartridges are turned in to be recycled (described in individual test directives).
- Do not use smokes, simulators, or flares within 100 feet of natural water bodies, and never throw them directly into a water body.
- Do not release chemicals or metals into streams. Do not release toxic aerosols within 300 feet of streams.
- For permitted off-road vehicle use, vehicles shall avoid driving in wetlands, floodplains, and on steep slopes. Vehicles and equipment must stay a minimum of 50 meters (164 feet) from the edge of slopes leading down to streams.
- Avoid large troop movements on steep slopes and in wetlands.
- For activities that require digging, such as the establishment of fighting positions, troops shall fill in holes once they are finished and cover them with pine straw or leaves to minimize erosion potential.
- During ground operations, keep digging to a minimum—no holes deeper than 3 feet will be dug, especially within 100 feet of any stream.
- No new cleared areas (bivouac, fighting position, etc.) shall be established within 100 feet of any water body, wetland, or floodplain, or on steep slopes.
- To reduce potential seed sources, treat areas with known invasive nonnative species problems.

Biological Information

Three federally-listed endangered or threatened species are known or have potential to occur within the project area. The following list indicates those species considered for this action:

Common Name	Scientific Name	Federal Status
Red-cockaded Woodpecker	*Picoides borealis*	E
Reticulated Flatwoods Salamander	*Ambystoma bishopi*	E
Eastern Indigo Snake	*Drymarchon corais couperi*	T

Red-Cockaded Woodpecker

The red-cockaded woodpecker (*Picoides borealis*) is listed as a federally endangered bird species and a state species of special concern. The RCW excavates cavities in live longleaf pine trees that are at least 85 years old. The RCW historically had a habitat range as far north as New Jersey and as far west as Oklahoma. Today, the RCW has been restricted to the southeastern United States, from Florida to Virginia and to southeast Texas, due to a loss of habitat. In the southeast, 98 percent of the longleaf pine forests have been removed, making relatively undeveloped federal lands such as Eglin AFB primary habitat for the species. Due to the preservation of continuous longleaf pine forests on Eglin, the Eglin Range has one of the largest remaining populations of RCWs in the country. In 2003, the USFWS identified Eglin AFB as 1 of 13 primary core populations for the RCW (U.S. Air Force, 2006a). Eglin tracks potential breeding groups (PBGs) as a measure of population health. In 1999, there were 184 PBGs and in 2009 there were an estimated 371 PBGs, allowing Eglin to reach the recovery goal of 350 PBGs.

The removal of longleaf pine trees, degradation of quality habitat, and noise generated from mission-related or other activities are potential threats to the RCW on the Eglin Range. Eglin is executing a USFWS-approved management strategy to meet certain growth objectives of the RCW and to obtain increased mission flexibility with the federal requirements for RCW impacts (U.S. Air Force, 2006a).

The Eglin Natural Resources Section (NRS) Geographic Information System (GIS) database includes the locations of active RCW cavity trees (tree containing one or more cavities that are utilized by the RCW) and inactive RCW cavity trees (tree containing cavities that were once utilized by the RCW but have not shown recent activity). The NRS also maps RCW foraging habitat around active clusters of RCW cavities in the GIS. Consultation guidelines require that transient foot and vehicle traffic lasting more than two hours be avoided within 200 feet of active RCW trees. Also, within this 200-foot buffer, traffic must stay on established trails and roads, and digging, excavating, and bivouacking are prohibited. In addition, if timber is to be removed within 0.5 miles of active cavity trees, then a forage habitat analysis must be completed to determine potential impacts. Consultation will be required if resulting resources fall below USFWS guidelines.

Eglin NRS personnel have observed no difference in RCW productivity or survival from those clusters located near an active range compared to those far away. RCWs continue to thrive in the forests around TA B-75 and active RCW trees and foraging habitat surround TA B-75, with 487 acres of RCW foraging habitat and four active trees actually on TA B-75 (Figure 2). Habitat quality seems to be influential in determining RCW productivity, survival and population stability.

Reticulated Flatwoods Salamander

The reticulated flatwoods salamander is federally listed as endangered and is a state species of special concern. Based on molecular and morphological analyses, Pauly et al. (2007) proposed the separation of the flatwoods salamander into two species. The division lies along the Apalachicola-Flint Rivers with reticulated flatwoods salamanders (*Ambystoma bishopi*) inhabiting areas to the west and frosted flatwoods salamanders (*A. cingulatum*, federally threatened) ranging to the east of the rivers. There are 20 known breeding ponds for the flatwoods salamander on the Eglin Range. Additionally, the Eglin Range supports approximately 17,000 acres of potential salamander habitat in mesic flatwoods.

Optimal habitat for this small mole salamander is open, mesic (moderately wet) woodlands of longleaf or slash pine flatwoods maintained by frequent fires and that contain shallow, ephemeral wetland ponds. Males and females migrate to these ephemeral ponds during the cool, rainy months of October through December. The females lay their eggs in vegetation at the edges of the ponds. Flatwoods salamanders may disperse long distances from breeding sites to upland sites where they live as adults (U.S. Air Force, 2006a).

The primary threat to the flatwoods salamander is loss of mesic habitat through the filling in of wetlands and other alterations to the landscape hydrology. Flatwoods salamander habitat is also threatened by the introduction of invasive, non-native species. Flatwoods salamanders and their active breeding wetlands both appear to have declined in number since the original Eglin surveys in 1993 and 1994. This is possibly due in part to several years of drought in the late 1990s and early 2000s. Wetlands may not have remained wet long enough for larvae to complete metamorphosis if rainfall amounts were not sufficient. This has resulted in little population recruitment over the last decade at Eglin's wetlands (U.S. Air Force, 2006a).

The U.S. Fish and Wildlife Service (USFWS) guidelines in the Federal Register, dated 1 April 1999, establish a 450-meter (1,476-foot) buffer area from the wetland edge of confirmed breeding ponds. Within the buffer area, the guidelines restrict ground-disturbing activities in order to minimize the potential for direct impacts to salamanders, the introduction and spread of invasive non-native plant species, and alterations to hydrology and water quality.

Potential flatwoods salamander buffer habitat for two ponds falls within TA B-75, with one pond on the test area and one just outside the eastern boundary (Figure 2). Although the likelihood of flatwoods salamanders existing in this pond is low and no flatwoods salamanders have been found here, Eglin protects all potential habitat due to the difficultly of documenting the presence/absence of salamanders.

Eastern Indigo Snake

The eastern indigo snake (*Drymarchon corais couperi*) is listed as a federal and state-threatened species that 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 and the burrows of other species for over-wintering. The snake frequents flatwoods, hammocks, stream bottoms, riparian thickets, and high ground with well-drained, sandy soils. The indigo snake has the potential to occur anywhere on the Eglin Range because it uses such a wide variety of habitats (U.S. Air Force, 2006a).

The species is extremely uncommon on Eglin, with the sighting of only 29 indigo snakes throughout the Eglin Range from 1956 to 1999, while no sightings have been reported since 1999 (U.S. Air Force, 2009). Most of these snakes were seen crossing roads or after being killed by vehicles. It is difficult to determine a precise number or even estimate of the number of these snakes due to the secretive nature of this species. Most of TA B-75 lacks the forested habitat preferred by the indigo snake, thus indigo snakes may traverse TA B-75, but are not likely to use the area as primary habitat.

Other Species Considered

Florida Black Bear

The Florida black bear (*Ursus americanus floridanus*) is currently listed as a state threatened species except in Baker and Columbia Counties and in Apalachicola National Forest. Florida black bear populations are currently found in Florida, Georgia, and a small population in Alabama. The Eglin bear population is among the smaller of the "core" or primary populations, with an estimated 60 to 100 individuals; however, Eglin's black bear population has shown signs of increase since the early 1990s. Eglin AFB is located within the primary bear range of what is known as the Eglin Bear Population as delineated by the FWC. The majority of Eglin AFB appears to rank low on the habitat scale for bears with the outer perimeters of the base ranking high on the habitat scale for bears. Eglin AFB may also serve as a travel corridor between moderate to high ranking habitats to the north, northwest, west, northeast, east, and southeast. Black bear in Florida breed in June through July, and young are born in January through February. Most black bears within the Eglin Range utilize the large swamps and floodplain forests in the southwest and northern portions of the Eglin Range, where they feed on fruits, acorns, beetles, and yellow jackets. Black bear sightings have occurred at numerous locations throughout the Eglin Range, the majority of which have been within the interstitial areas (U.S. Air Force, 2006a).

The black bear has been sighted near TA B-75 (Figure 3). Most of TA B-75 lacks the forested habitat preferred by the black bear, thus black bears may traverse TA B-75, but are not likely to use the area as primary habitat.

Gopher Frog

Gopher frogs (*Rana capito*), a state species of concern, are often associated with gopher tortoise habitat, as they use gopher tortoise burrows for cover, but are also known to flourish where tortoises no longer occur. They also use old field mouse burrows, hollow stumps, and other holes for cover. The species requires nearby seasonally flooded grassy ponds, depression marshes, or Sandhills upland lakes that lack fish populations for breeding. They have been found in the longleaf pine, turkey oak, pine flatwoods, sand pine scrub, and xeric hammock communities of the Sandhills and Open Grassland/Shrubland ecological associations up to 2 kilometers from the breeding ponds. One confirmed gopher frog pond exists in the eastern portion of TA B-75, and one along the southeastern boundary (Figure 2).

Gopher Tortoise

The gopher tortoise (*Gopherus polyphemus*), a state-threatened species, is found primarily within the Sandhills and Open Grassland ecological associations on Eglin, where it excavates a tunnel-like burrow for shelter from climatic extremes and refuge from predators. The primary features of good tortoise habitat are sandy soils, open canopy with plenty of 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 are important habitat for many species, including the federally-listed indigo snake (U.S. Air Force, 2006a).

A Candidate Conservation Agreement for the gopher tortoise has been developed as a cooperative effort among state, federal, nongovernmental, and private organizations. The purpose of this agreement is to collectively implement proactive gopher tortoise conservation measures across its eastern range. Historically, gopher tortoise burrows have existed on various portions of TA B-75; however, no comprehensive surveys have been done at this test area.

Determination of Impacts

Based on the scope of the Proposed Action, as described above, potential impacts to sensitive species from TA B-75 activities (munitions and pyrotechnics use and ground operations) can be categorized as follows:

- Direct Physical Impacts – Physical harm (i.e., injury or mortality) to listed species as a result of human activities. The main cause of direct physical impacts associated with the Proposed Action would be physical contact, which could involve the crushing/trampling of, or collision with, a species due to vehicle traffic or human movements, or a munitions or shrapnel strike resulting in physical damage or mortality of a species. Chemical impacts from metals and explosives residue would also be considered direct physical impacts.

- Harassment – Actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns, which include, but are not limited to, breeding, feeding, or sheltering. Activities under the Proposed Action may result in harassment due to the following:
    - Nest/burrow destruction – Destruction of a nest or burrow due to excessive ground disturbance, causing a species to relocate.
    - Foraging/nesting disturbance – Disruption of normal breeding/nesting or foraging activity.
- Habitat Impacts – Habitat impacts include loss, alteration, and/or degradation of habitat. These impacts characterize the physical damage, stress, or disruptions that may adversely alter or degrade the habitats essential to the sustainment of a species. A habitat in this instance refers to the ecological and geomorphological components, such as vegetation, soil, topography, and water that support listed species. Activities under the Proposed Action may result in habitat impacts due to the following:
    - Soil erosion – Loss of soil due to vehicular traffic, human movements, munitions impacts, or other activities that involve the destruction or removal of vegetative ground cover occurring in or near sensitive species habitat resulting in habitat loss, alteration, or degradation.
    - Sensitive habitat destruction – Destruction or degradation of sensitive habitats such as wetland areas or foraging habitat resulting from human activities (i.e., driving, wildfires, munitions, pyrotechnics) having a negative impact.

Red-cockaded Woodpecker

Harassment

Noise from test and training activities has the potential to affect the behavior and reproduction of RCWs on and near TA B-75. Noise meaning is a crucial determinant in whether wild animals react to a noise source. For example, waterfowl and other game bird species are typically more responsive to noise than non-game species due to the associated danger for hunted species (i.e., loud guns). Hunted species may become sensitized such that they will increase energy expenditures to avoid perceived danger from loud noises. Alternately, if a noise is deemed harmless by an animal, then the animal may habituate or adapt behaviorally and physiologically over time (Bowles, 1995). Animals may initially react with a startle effect from noises, but adapt over time, so that even this behavior is eradicated. The use of specified targets and areas for testing and training facilitates the habituation of wildlife by making the noise source spatially predictable. Because RCWs in the TA B-75 vicinity are regularly exposed to loud noise (i.e., detonations) without any associated physical danger, these individuals have likely become habituated to the noises, such that they do not expend energy on harmless stimuli.

Based on a review of literature pertaining to noise exposure in wildlife, Bowles (1995) suggests outcome measures, such as reproductive success, are better indicators of distress in wildlife than short-term responses (i.e., startle reaction). Negative reproductive effects have not been seen in the RCW clusters in the TA B-75 area, and the population in the TA B-75 vicinity actually is growing. Based on the fact that the entire Eglin RCW population continues to grow, it appears that RCWs on Eglin have adapted to the noises associated with the military mission. There is other suitable habitat available on Eglin, but the RCWs have continued to nest and forage near TA B-75. Quality habitat appears to outweigh any negative influences associated with mission noise.

Munitions

Munitions noise is categorized as high explosive impulse noise, such as occurs from live bombs or artillery. This type of noise is accompanied by abrupt increases in pressure and powerful, low frequency sound that rapidly spreads from the point of detonation. The sound and pressure of a detonation can temporarily or permanently affect hearing, as well as injure or kill an animal depending on the proximity of the animal to the source. Inert and live bombs will be dropped on existing targets on TA B-75. Potentially harmful levels of noise could extend outward to active cavity trees. Although brief, exposure to this noise carries a risk of acoustic discomfort. Similar exposures are occurring on occasion throughout the test area and other test areas on the reservation with no known detrimental impacts to the overall population. Eglin NRS personnel have observed no difference in RCW productivity or survival from those clusters located near an active range compared to those far away. Compared to noise, habitat quality seems to be more influential in determining RCW productivity, survival and population stability.

Small Arms and Artillery Noise. RCWs could be disturbed by small arms and artillery noise. Delaney and others (2002) published results of an experiment showing that at certain distance and noise levels from small-arms use and artillery, RCWs would not flush. RCWs did not flush when the experimental sources (.50 cal blanks and artillery simulators) were located more than 152 meters away (Delaney et al., 2002). When nesting, RCWs did flush in response to noise, but they returned to the nests within several minutes and nesting success was not affected (Delaney et al., 2002). Based on observations of military training and RCW response, Delaney and others (2002) suggest that: 1) land management (i.e., prescribed fire) is a more influential factor in the overall success of RCWs than training activities or noise, and 2) the RCW's ability to deal with disturbance factors during breeding season is strongly affected by the presence of quality habitat (i.e., foraging habitat and available nest cavities).

The degree of disturbance to wildlife created by small-arms fire is difficult to separate from the additive effects, and probably more disturbing effect of human presence. A study noted that humans, eagles, and boats caused a greater percentage of black brants (a type of geese) to take flight than jets, propeller aircraft, and gunshots (Ward et al., 1986). In general, human presence and natural predators more often caused startle responses than noise (Manci et al., 1988).

Based on the 7.62 mm data in Table 2, potentially harmful noise levels from single-event small-arms fire occur within 50 feet of the point of fire. Thus, firing within 50 feet of an active RCW cavity tree or other known sensitive species location is not recommended. U.S. Army guidelines allow firing of small arms, but not artillery, within 200 feet of a marked cavity tree (U.S. Army, 2006).

Table 2. Impulse Noise from 7.62 mm Fire

Noise Level (P-weighted Decibels)	Distance (feet)
155	At Gunner
140	50
92	1,640

Source: U.S. Army CHPPM, 2004

Ground Operations

Vehicle movement and foot traffic associated with ground operations may create noise and disturbance that will affect RCWs foraging along the periphery of TA B-75 and in the eastern portion of the test area. Depending on the type of vehicle, noise levels may be quite loud and accompanied by heavy vibration. Delaney et al. (2002) monitored nesting RCWs as a convoy of vehicles passed (Table 3). Birds flew away as a result of the passing of the convoy, but returned shortly thereafter. Vehicle use along existing TA B-75 roadways does not represent a novel noise or disturbance source such that birds would abandon the area. Birds near these areas are likely acclimated to the presence of vehicles.

Table 3. Red-cockaded Woodpecker Response to Vehicle Noise and Disturbance

Noise Source	Noise Level (SEL)	Distance (meters)	Notes
Vehicles (convoy of Bradley fighting vehicles and civilian vehicle)	<75	>50	Bird returned 10 minutes after convoy had passed. Birds returned after 3 minutes when civilian vehicle had passed.

< = Less Than; > = Greater Than; SEL = Sound Exposure Level

Eglin follows the *Management Guidelines for the Red-cockaded Woodpecker on Army Installations* (U.S. Army, 2006), which details allowed and restricted activities near active RCW trees (Table 4). Military training within 200 feet of marked cavity trees is limited to military activities of a transient nature (less than 2 hours of occupation). Military vehicles are prohibited from occupying a position or traversing within 50 feet of a marked cavity tree, unless on an existing road, maintained trail, or firebreak. Activities that are not allowed within the 200-foot buffer include bivouacking and establishing command posts. U.S. Army (2006) provides a detailed description of management requirements with respect to training near RCWs.

Although RCWs may be exposed to high noise levels associated with TA B-75 missions, noise events are typically very short. RCWs continue to nest successfully near TA B-75 in spite of the noise from munitions and ground training; the presence of suitable habitat appears to outweigh any negative influences associated with mission-related noise.

Habitat Impacts

The use of munitions and pyrotechnics increases the risk of wildfires. Fires are usually beneficial to longleaf communities, but it is unknown whether the wildfires potentially associated with the Proposed Action would have a net positive or negative effect on RCWs. The RCW requires frequent fire to keep scrubby vegetation to a minimum. Wildfires may achieve this purpose. However, with every wildfire, there is the potential for damage or mortality of active RCW cavity trees if the trees ignite. Prescribed fire is the preferred option for maintaining these habitats.

Table 4. Selected Army Training Activities Allowed/Not Allowed Within 200 Feet of Marked RCW Cavity Tree

Mission Activity	Allowed
Maneuver and Bivouac:	
Hasty defense, light infantry, hands and hand tool digging only, no deeper than 2 feet, 2 hours maximum	Yes
Hasty defense, mechanized infantry/armor	No
Deliberate defense, light infantry	No
Deliberate defense, mechanized infantry/armor	No
Establish command post, light infantry	No
Establish command post, mechanized infantry/armor	No
Assembly area operations, light infantry/mech infantry/armor	No
Establish Combat Support/Combat Service Support (CS/CSS) sites	No
Establish signal sites	No
Foot transit through the cluster	Yes
Wheeled vehicle transit through the cluster [(1)]	Yes
Armored vehicle transit through the cluster [(1)]	Yes
Cutting natural camouflage, hardwood only	Yes
Establish camouflage netting	No
Vehicle maintenance for no more than 2 hours	Yes
Weapons Firing:	
7.62 millimeter and below blank firing	Yes
.50 caliper blank firing	Yes
All others	No
Noise:	
Generators	No
Artillery/hand grenade simulators	Yes
Hoffman-type devices	Yes
Pyrotechnics/Smoke:	
CS/riot agents	No
Smoke, haze operations only, generators or pots, fog oil and/or graphic flakes [(2)]	Yes

Mission Activity	Allowed
Smoke grenades	Yes
Incendiary devices to include trip flares	Yes
Star clusters/parachute flares	Yes
Hexachloroethane (HC) smoke of any type	No
Digging:	
Tank ditches	No
Deliberate individual fighting positions	No
Crew-served weapons fighting positions	No
Vehicle fighting positions	No
Other survivability/force protection positions	No
Vehicle survivability positions	No

Source: U.S. Army, 2006

1. Vehicles will not get any closer than 50 feet of a marked cavity tree unless on existing roads, trails, or firebreaks.
2. Smoke generators and smoke pots will not be set up within 200 feet of a marked cavity tree, but the smoke may drift through the 200-foot circle around a cavity tree.

Munitions and pyrotechnics use will follow Eglin's Wildfire Specific Action Guide Restrictions, which rate fire danger from low to extreme (U.S. Air Force, 2006). During days with low fire danger, there are no restrictions on missions, but on days with extreme fire danger, no pyrotechnics are allowed without prior approval from the Wildland Fire Program Manager at Eglin's Natural Resources Section. Within 3 working days of notification, the Eglin Natural Resources Section will reprovision a cavity tree if one is destroyed due to TA B-75 activities (i.e., due to wildfire).

Avoidance and Minimization Measures for the RCW

The following avoidance and minimization measures will reduce or eliminate impacts associated with the proposed action:

- Continue monitoring of RCWs by the Eglin Natural Resources Section.
- Follow the Army Guidelines for RCWs (U.S. Army, 2006).
- Within 200 feet of marked RCW cavity trees allow only military activities of a transient nature (less than two hours occupation).
- Within the 200-foot RCW buffer, prohibit bivouacking, excavating, digging, and establishing command posts.
- Prohibit military vehicles from occupying a position or traversing within 50 feet of a marked RCW cavity tree, unless on an existing road or maintained trail or firebreak.
- Immediately report to Range control known damage to any marked cavity or cavity start tree and/or any known extensive soil disturbance in and around RCW clusters; Range control must notify NRS biologists immediately.
- Within 3 working days of notification, the Eglin NRS will reprovision a cavity tree if one is destroyed due to training activity.

- If a unit causes damage to training land within a cluster, the responsible unit will coordinate with the NRS to repair damage as soon as practicable (normally within 3 working days of notification).
- All digging for military training activities in RCW habitat management units must be filled and inspected by the proponent upon completion of training.
- Continue prescribed burning as much as possible in fire dependent habitats, particularly RCW foraging habitat.

Eglin Natural Resources Section believes the proposed action may affect, but is **not likely to adversely affect** the RCW or its foraging habitat because the likelihood of direct physical impacts to RCWs is low, avoidance and minimization measures are in place to minimize potentially damaging hot wildfires, and units will follow the Army Guidelines for RCWs.

Reticulated Flatwoods Salamander

Habitat alteration to potential flatwoods salamander habitat is possible from munitions, pyrotechnics, and ground operations. The increase in munitions and pyrotechnics use will likely increase the number of wildfire starts at TA B-75. Wildfires ignited by TA B-75 activities could have both positive and negative impacts. The flatwoods salamander requires frequent fire to keep scrubby vegetation to a minimum. Wildfires may achieve this purpose, but with every wildfire, there is the potential for the alteration of the hydrology of salamander habitat from fire suppression activities. To minimize the likelihood of damaging wildfires, munitions and pyrotechnics use will follow Eglin's Wildfire Specific Action Guide Restrictions (U.S. Air Force, 2006b).

Vehicles also have the potential to alter salamander habitat in the form of soil disturbance and erosion if conducted in or near potential flatwoods salamander habitat. Because off-road vehicle use and other ground-disturbing activities are restricted within 1,500 feet of potential flatwoods salamander ponds, the possibility of impacts is minimal.

Chemical residue from munitions and pyrotechnics has the potential to impact flatwoods salamander health if accumulated in water. Chemicals can interfere with respiration, reproduction, nervous system functions, and other physiological functions. Munitions may leach explosive residue into soils, or metals such as lead, aluminum, and copper from weathered casings and projectiles if the expended munitions are not retrieved. Existing factors limit the likelihood of such contamination from occurring: 1) Range personnel routinely remove spent ordnance from target areas; and 2) Eglin restricts the release of any chemical or metal within the 1,500-foot buffer for potential flatwoods salamander ponds.

Avoidance and Minimization Measures for the R. Flatwoods Salamander

The following avoidance and minimization measures will reduce or eliminate impacts associated with the proposed action:

- On field maps, mark flatwoods salamander ponds with a 1,500 ft buffer as areas to avoid; inform trainees of importance of avoiding these areas.
- Digging, vegetation cutting, off-road vehicle use and other ground-disturbing activities should not occur within 1,500 feet of flatwoods salamander ponds or within 100 feet of gopher frog ponds.
- Do not use smokes, simulators, or flares within 100 feet of natural water bodies, and never throw them directly into a water body.
- Do not release chemicals or metals and do not release toxic aerosols within the 1,500-foot buffer for potential flatwoods salamander habitat.
- Avoid ground disturbing fire suppression activities (bulldozers) in wetlands, particularly in flatwoods salamander habitat.
- Locate munitions impact areas away from wetlands, especially flatwoods salamander ponds.
- Manage lead-based projectiles near natural water bodies, particularly flatwoods salamander ponds.

With adherence to the Eglin Wildfire Specific Action Guide Restrictions, and restrictions on where munitions, pyrotechnics, and vehicles can be used, the Eglin NRS believes TA B-75 activities may affect, but are **not likely to adversely affect** the reticulated flatwoods salamander.

Eastern Indigo Snake

Increased levels of wheeled vehicular traffic have the potential to impact indigo snakes and their habitat. However, most of TA B-75 is open grassland, which is not the preferred habitat of the indigo snake. Additionally, the potential for encountering an indigo snake is very low; Eglin has not had any indigo snake sightings or reports since 1999. Incidental contact with personnel on foot or vehicles could result in trampling or crushing of individuals, but this occurrence is unlikely, as a snake would most likely move away from the area if it sensed a general disturbance in its vicinity. If an indigo snake is sighted, personnel will cease activities until the snake has moved away from the area, and will immediately notify the NRS. Personnel will follow the *Standard Protection Measures for the Eastern Indigo Snake* (U.S. Air Force, 2004).

Avoidance and Minimization Measures for the Eastern Indigo Snake

The following avoidance and minimization measures will reduce or eliminate impacts associated with the proposed action:

- Provide units 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. Personnel should stop activities if an eastern indigo snake is sighted and allow the snake to move away from the site before resuming activities.

- Avoid gopher tortoise burrows by 25 ft.
- Prior to land clearing or establishment of a new target area, contact Eglin Natural Resources for a gopher tortoise/indigo snake survey.
- For any gopher tortoise burrows that were in imminent danger from munitions testing or training, contact Eglin Natural Resources for relocation. Eglin would follow the *Gopher Tortoise Permitting Guidelines* (FWC, 2008) for relocation of gopher tortoises and commensals (i.e., indigo snake).

Due to the low probability of an encounter and the requirement to avoid any sighted indigo snake, the Eglin NRS has determined that this action may affect, but is **not likely to adversely affect** the Eastern indigo snake.

Other Species Considered

Florida Black Bear

Vehicle strikes and munitions noise impacts are possible from TA B-75 activities. Due to the open nature of TA B-75, vehicle operators would be able to easily spot any bears prior to reaching them. Vehicle operators will be instructed to stop and allow bears to move away from the road before continuing activities, and to contact the NRS to report the sighting.

Because bears are not limited to any particular geographic area or habitat on Eglin, they are free to avoid noise and disturbance from munitions. Bears would likely just move away from noisy areas. Additionally, exposure to munitions noise is likely already occurring given the wide distribution of the black bear on Eglin AFB. The Eglin NRS believes TA B-75 activities will not significantly impact the Florida black bear.

Gopher Frog

Habitat alteration and chemical impacts may affect the gopher frog pond along the southeastern boundary of TA B-75 (Figure 2). The restriction on off-road vehicle use within 100 feet of gopher frog ponds will minimize the potential for vehicle impacts. As discussed for the flatwoods salamander, wildfires ignited by TA B-75 activities could have both positive and negative impacts to gopher frog breeding ponds. To minimize the likelihood of damaging wildfires and suppression activities, user groups will follow the Eglin Wildfire Specific Action Guidelines.

Aluminum from chaff and magnesium from flares are the primary chemicals of potential concern for gopher frogs on TA B-75 because these are released across the entire test area. Repeated, concentrated exposure to chaff and flare debris could negatively affect the inhabitants of small bodies of water. The number of units expended compared to the surface area over which they will be delivered is relatively small. Mandatory munitions clean-up procedures and restrictions on the release of chemical materials within 300-ft of water bodies limit the likelihood of contamination from munitions.

With the adherence to Eglin Wildfire Specific Action Guidelines, munitions cleanups, and restrictions on where munitions, pyrotechnics, and vehicles can be used, the Eglin NRS believes TA B-75 activities will not significantly impact the gopher frog.

Gopher Tortoise

Burrow collapse and direct physical impacts are possible from vehicles and munitions use on TA B-75. The areas of concern for impacts to gopher tortoises are the munitions targets and any areas where extensive off-road vehicle use may occur. The likelihood of a direct impact from shrapnel is extremely low, and is further reduced at times when tortoises are in their burrows. Vehicles are used primarily on established roads, which limit the potential for impacts. However, data is not maintained on the number of vehicles that are used on the test area as a part of mission activity, and a quantified probability of impacts cannot be produced.

The probability of widespread loss of burrows is extremely low. Prior to missions involving extensive off-road activities in the vicinity of gopher tortoise burrows, units must contact the NRS to install markers next to burrows for avoidance. Troops will be instructed to avoid gopher tortoises and gopher tortoise burrows, and not to dig or drive within 25 feet of any gopher tortoise burrow. Any potential digging or ground disturbance would require a separate 813 document and gopher tortoise survey prior to construction. Eglin Natural Resources should be notified if a tortoise is sighted. The Eglin NRS believes that TA B-75 activities will not significantly impact the gopher tortoise.

Conclusion

The proposed action would have no significant adverse effects on any of the resources evaluated in this BA. Avoidance and Minimization Measures, which are part of the proposed action, would reduce or eliminate direct effects to biological resources and their habitats. All participants would be provided the conditions and restrictions regarding biological resources in written or verbal form. Based on analysis of the potential impacts to federally protected species from the proposed activities, Test Area B-75 activities may affect, but are **not likely to adversely affect** the RCW, reticulated flatwoods salamander, or Eastern indigo snake.

The U.S. Fish and Wildlife Service will be notified immediately if any of the actions considered in this proposed action are modified, or if additional information on listed species becomes available, as a re-initiation of consultation may be required. If impact to listed species occurs 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. The Natural Resources Section believes this fulfills all requirements of the Endangered Species Act and no further action is necessary.

If you have any questions regarding this letter or any of the proposed activities, please do not hesitate to contact either Mr. Bob Miller (850) 883-1153 or myself at (850) 882-8391.

Sincerely,

STEPHEN M. SEIBER, YF-02
Chief, Natural Resources Section

Attachment: Figures 1-2

REFERENCES:

Bowles, A.E., 1995. Responses of Wildlife to Noise. In Wildlife and recreationists; coexistence through management and research, Eds. Knight, R. and K. Gutzwiller. Pp. 109-156.

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INFORMAL CONSULTATION REGARDING

POTENTIAL IMPACTS TO FEDERALLY LISTED SPECIES
RESULTING FROM TA B-75 ACTIVITIES, EGLIN AFB, FL

Reviewed by:

Bob Miller — Date: 6/3/10
Endangered Species Biologist
Eglin Natural Resources Section

Bruce Hagedorn — Date: 6/3/10
Supervisory Biologist
Chief, Wildlife Element
Eglin Natural Resources Section

Stephen M. Seiber — Date: 6/8/2010
Chief, Eglin Natural Resources Section

USFWS CONCURRENCE:

_____ Date _____
Project Leader
U.S. Fish and Wildlife Service
Panama City, FL

FWS Log No _____

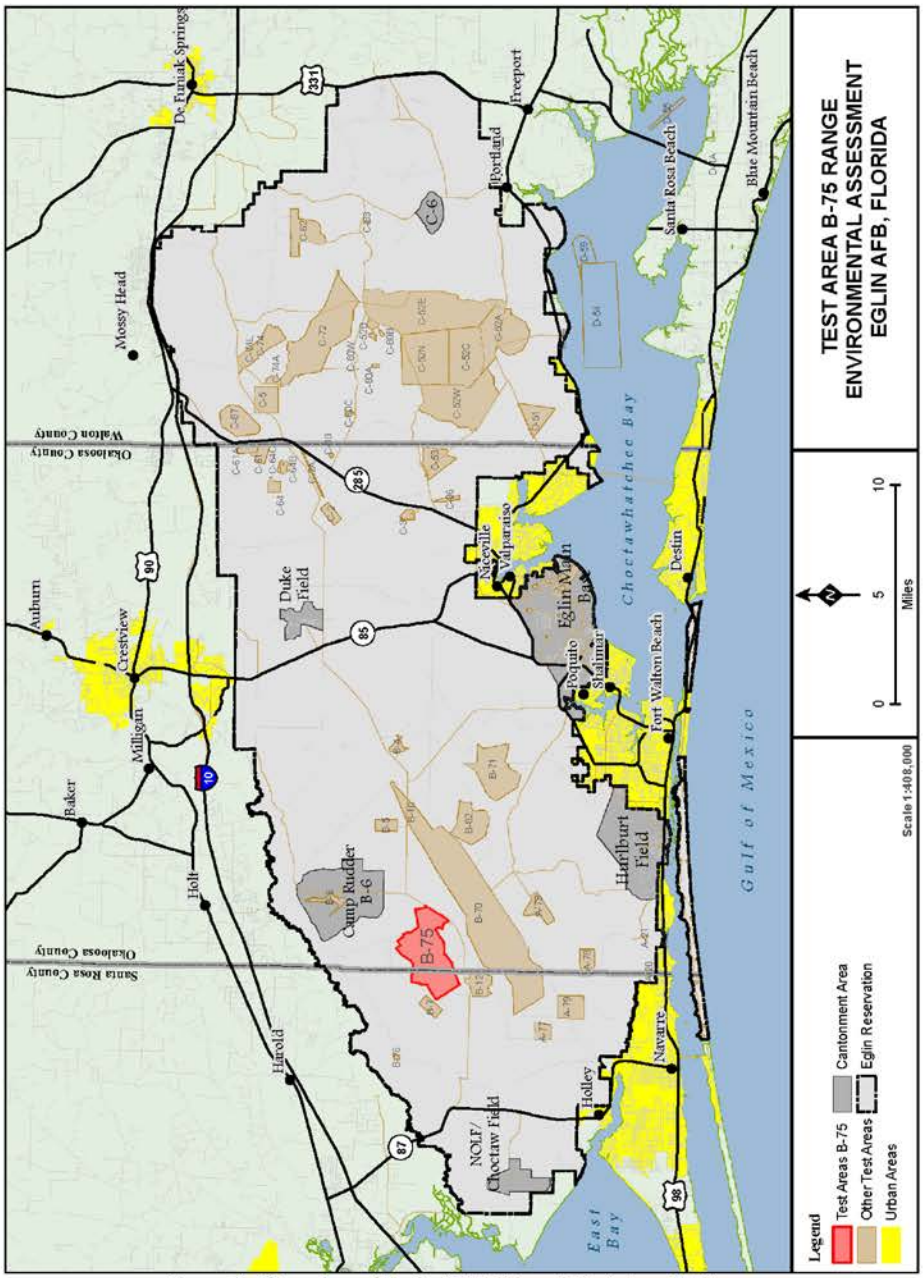

Figure 1. Overview of Eglin AFB, FL and Test Area B-75

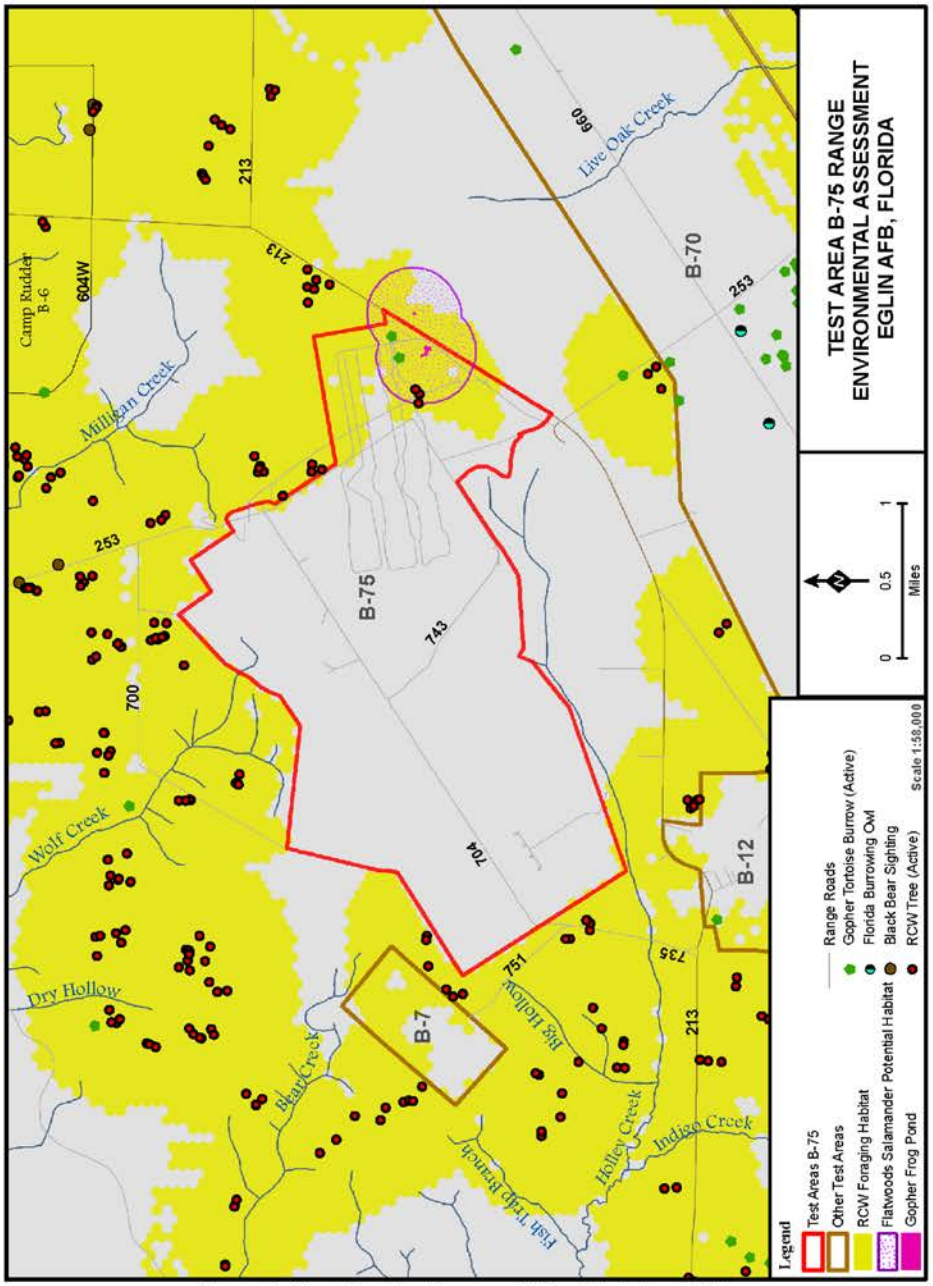

Figure 2. Sensitive Species on and Near Test Area B-75

APPENDIX H

PUBLIC INVOLVEMENT:

NOTICE OF AVAILABILITY, AGENCY COMMENTS, AND AIR FORCE RESPONSES TO COMMENTS

NOTICE OF AVAILABILITY

The following Notice of Availability was published in the *Northwest Florida Daily News* on May 25, 2010. No public comments were received.

Public Notification

In compliance with the National Environmental Policy Act, Eglin Air Force Base announces the availability of the *Test Area B-75 Draft Range Environmental Assessment, Revision 1, at Eglin Air Force Base, FL*, and Draft Finding of No Significant Impact for public review.

The Proposed Action is for the 46th Test Wing Commander to establish a new authorized level of activity for Test Area B-75 on Eglin AFB that is based on an anticipated maximum usage, with known or minimal environmental impacts. The Preferred Alternative, Alternative 2, would authorize the current level of activity at TA B-75 plus a 300-percent increase in operations over the current level of activity plus foreseeable future activities. The No Action Alternative and Alternative 1 are not expected to be sufficient to account for the expected growth of testing and training activities at Eglin AFB over the next 10 years. Therefore, Alternative 2 was selected as the Preferred Alternative.

Your comments on this Draft Range Environmental Assessment (REA) are requested. Letters and other written or oral comments 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, including private addresses, will be used to identify your desire to make a statement during the public comment period and/or to compile a mailing list to fulfill requests for copies of the Final REA or associated documents. 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.

The Draft Range Environmental Assessment is available on the web at www.eglin.af.mil/environmentalassessments.asp, from May 25th until June 8th, 2010. Comments must be received by June 11th, 2010. Each of the libraries in Crestview, Fort Walton Beach, Navarre, Milton and Niceville have computers available to the general public and librarians who can provide assistance linking to the document. Hard copies of the document may be available for a limited time by contacting: Mike Spaits, 96th Air Base Wing Environmental Public Affairs, 501 De Leon Street, Suite 101, Eglin AFB, Florida 32542-5133 or email: spaitsm@eglin.af.mil. Tel: (850) 882-2836; Fax: (850) 882-3761.

For more information or to comment on these proposed actions, contact: Mike Spaits, Environmental Public Affairs, at one of the contacts above.

2024553

AGENCY COMMENTS

Florida Department of Environmental Protection

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

Charlie Crist
Governor

Jeff Kottkamp
Lt. Governor

Michael W. Sole
Secretary

July 20, 2010

Ms. Amy L. Sands, Project Manager
Science Applications International Corp.
1140 North Eglin Parkway
Shalimar, FL 32579

RE: Department of the Air Force – Draft Range Environmental Assessment, Revision 1 for Test Area B-75 on Eglin Air Force Base – Okaloosa and Santa Rosa Counties, Florida.
SAI # FL201005215261C

Dear Ms. Sands:

The Florida State Clearinghouse has coordinated a review of the subject Draft Range Environmental Assessment (EA) under the following authorities: Presidential Executive Order 12372; Section 403.061(40), *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 Fish and Wildlife Conservation Commission (FWC) acknowledges that there is very high potential for state-listed species to be present on or near TA B-75. Although there is currently a high level of activity within TA B-75, the 300% increase in operations over the current level of activity plus foreseeable future activities has the potential to negatively impact fish and wildlife resources in and around the site. An increased level of activity may lead to additional temporary closures of recreation areas adjacent to the test area. As there are gopher tortoises on-site that may be relocated, staff recommends that consideration also be given to commensal species that use gopher tortoise burrows when proposing relocations within the Eglin AFB. The FWC emphasizes the importance of following the proposed habitat protection measures for reticulated flatwoods salamanders since their range is limited and habitat considered vitally important. Staff has provided further recommendations on minimization of impacts to public outdoor recreation where public use and safety do not interfere with mission activities within the enclosed letter.

The West Florida Regional Planning Council (WFRPC) has provided a number of recommendations within the attached letter to ensure the project's consistency with the Strategic Regional Policy Plan for West Florida. Best Management Practices should be

used to avoid and minimize impacts to surface waters, wetlands and potential groundwater recharge areas. Direct, secondary and cumulative impacts to known habitat areas for endangered, threatened and rare species should also be avoided.

Based on the information contained in the Draft Range EA and the 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 activity's compliance with FCMP authorities, including federal and state monitoring of the activity to ensure its continued conformance, and the adequate resolution of issues identified during this and subsequent reviews. The state's final concurrence of the project's consistency with the FCMP will be determined during the environmental permitting process, if applicable.

Thank you for the opportunity to review the Draft Range EA. Should you have any questions regarding this letter, please contact Ms. Jillian Schatzman at (850) 245-2187.

Yours sincerely,

Sally B. Mann

Sally B. Mann, Director
Office of Intergovernmental Programs

SBM/js
Enclosures

cc: Mary Ann Poole, FWC
John Gallagher, WFRPC

Project Information	
Project:	FL201005215261C
Comments Due:	06/30/2010
Letter Due:	07/20/2010
Description:	DEPARTMENT OF THE AIR FORCE - DRAFT RANGE ENVIRONMENTAL ASSESSMENT, REVISION 1 FOR TEST AREA B-75 ON EGLIN AIR FORCE BASE - OKALOOSA AND SANTA ROSA COUNTIES, FLORIDA.
Keywords:	USAF - DREA, TEST AREA B-75 ON EGLIN AFB - OKALOOSA AND SANTA ROSA CO.
CFDA #:	12.200

Agency Comments:
WEST FLORIDA RPC - WEST FLORIDA REGIONAL PLANNING COUNCIL
The WFRPC has provided a number of recommendations to ensure the project's consistency with the Strategic Regional Policy Plan for West Florida. Best Management Practices should be used to avoid and minimize impacts to surface waters, wetlands and potential groundwater recharge areas. Direct, secondary and cumulative impacts to known habitat areas for endangered, threatened and rare species should also be avoided.
FISH and WILDLIFE COMMISSION - FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION
The FWC advises that there is very high potential for state-listed species to be present on or near TA B-75. Although there is currently a high level of activity within TA B-75, the 300% increase in operations over the current level of activity plus foreseeable future activities have the potential to negatively impact fish and wildlife resources in and around the site. An increased level of activity may lead to additional temporary closures of recreation areas adjacent to the test area. As there are gopher tortoises on-site that may be relocated, staff recommends that consideration also be given to commensal species that use gopher tortoise burrows when proposing relocations on Eglin lands. The FWC emphasizes the importance of following the proposed habitat protection measures for reticulated flatwoods salamanders since their range is limited and habitat considered vitally important. In addition, staff has provided recommendations on minimization of impacts to public outdoor recreation where public use and safety do not interfere with mission activities.
STATE - FLORIDA DEPARTMENT OF STATE
No Comment/Consistent
ENVIRONMENTAL PROTECTION - FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
No Comments from the DEP Northwest District Office.
NORTHWEST FLORIDA WMD - NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT
No Comment/Consistent

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

Visit the Clearinghouse Home Page to query other projects.

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Florida Fish and Wildlife Conservation Commission

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Managing fish and wildlife resources for their long-term well-being and the benefit of people.

620 South Meridian Street
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32399-1600
Voice: (850) 488-4676

Hearing/speech impaired:
(800) 955-8771 (T)
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MyFWC.com

June 28, 2010

RECEIVED
JUL 01 2010
DEP Office of Intergovt'l Programs

Ms. Lauren Milligan, Clearinghouse Coordinator
Florida State Clearinghouse
Florida Department of Environmental Protection
3900 Commonwealth Boulevard, Mail Station 47
Tallahassee, FL 32399-3000

Re: SAI #FL201005215261C, Department of the Air Force, Draft Range Environmental Assessment, Revision 1 for Test Area B-75 on Eglin Air Force Base, Okaloosa and Santa Rosa Counties

Dear Ms. Milligan:

The Division of Habitat and Species Conservation, Terrestrial Habitat Conservation and Restoration Section, of the Florida Fish and Wildlife Conservation Commission (FWC) has coordinated agency review of the referenced Draft, Range Environmental Assessment (REA) document and provide the following comments and recommendations.

Project Description

The Proposed Action is for the 46 TW commander to establish a new authorized level of activity for Test Area (TA) B-75 that is based on an anticipated maximum usage. TA B-75 makes up a portion of the Eglin Military Complex and supports a variety of test and training missions. Demonstrating that the individual and cumulative effects of this usage level do not have significant environmental impact is the method for establishing the maximum threshold baseline, which is being identified as the Range Environmental Impact Analysis Process (EIAP) Baseline.

The No Action Alternative and Alternative 1 are not expected to be sufficient to account for the expected growth of testing and training activities at Eglin Air Force Base (Eglin AFB) over the next ten years. Therefore, Alternative 2 was selected as the Preferred Alternative to adequately cover the environmental analysis needed to support potential increased testing and training requirements as they occur. Alternative 2 allows for a 300% increase in TA B-75 operations over the current level of activity plus foreseeable future activities. Implementation of management actions would allow a surge in test and training activities while minimizing impacts to environmental and natural resources.

TA B-75 is located on the western side of the Eglin Range Complex in Okaloosa and Santa Rosa counties, about 15 miles northwest of Eglin Main Base and is approximately four miles long and approximately two miles wide. The test area provides over six square miles of continuous land test area.

Area Resources and Condition

Initial screening of fish and wildlife habitat GIS data layers and project maps shows that there is very high potential for state-listed species to be present on or near the TA B-75.

According to the draft REA document the following imperiled plant and animal species may occur on or near TA B-75: the gopher frog (*Rana capito*, State – Species of Special Concern [SSC]), reticulated flatwoods salamander (*Ambystoma bishopi*, State – SSC, Federal – Endangered [E]), Florida pine snake (*Pituophis melanoleucus mugitus*, State – SSC), eastern indigo snake (*Drymarchon corias couperi*, State – Threatened [T], Federal – T), gopher tortoise (*Gopherus polyphemus*, State – T), southeastern American kestrel (*Falco sparverius paulus*, State – T), red-cockaded woodpecker (*Picoides borealis*, State – SSC, Federal – E), and Florida black bear (*Ursus americanus floridanus*, State – T). While the FWC does not regulate plants, we note that the following listed plants may also occur on or near TA B-75: hairy wild indigo (*Baptisia calycosa var villosa*, State –T), pineland hoary-pea (*Tephrosia mohri*, State – T), Baltzell's sedge (*Carex baltzelli*, State – T), Curtiss' sandgrass (*Calamovilfa curtissii*, State – T), Arkansas oak (*Quercus arkansana*, T), Ashe's magnolia (*Magnolia ashei*, State – E), and silky camellia (*Stewartia malacodendron*, State – E). In addition to species listed in the Draft REA, FWC's Environment Resource Analysis for TA B-75 indicated rare fish drainages for the Alabama shad (*Alosa alabamae*), alligator gar (*Atractosteus spatula*), bluenose shiner (*Pteronotropis welaka*), gulf sturgeon (*Acipenser oxyrinchus desotoi*), speckled chub (*Macrhybopsis aestivalis*), ironcolor shiner (*Notropis chalybeaus*), spotted bullhead (*Ameiurus serracanthus*), and speckled darter (*Etheostoma stigmaeum*) occur within TA B-75.

Issues and Recommendations

Though there is currently a high level of activity within TA B-75, the 300% increase in operations over the current level of activity plus foreseeable future activities has the potential to negatively impact fish and wildlife resources in and around TA B-75 (directly and indirectly). In addition, an increased level of activity may lead to additional temporary closures of recreation areas adjacent to the test area.

Two gopher tortoise burrows exist in the eastern end of the test area near Eglin Road 213, and there is the potential for gopher tortoises anywhere on the test area. The draft REA states, "Training and heavy munitions use should be avoided near any gopher tortoise burrows and if a gopher tortoise is sighted, activities should cease until the tortoise moves out of harm's way. Transportation and release of tortoises would follow guidelines established by the FWC." Certainly, relocation is a valid option for the gopher tortoise, as Eglin contains many additional acres of quality sandhill habitat. There is, however, little discussion of the commensal species, such as the gopher frog, indigo snake, and pine snake, which use gopher tortoise burrows. Consideration should be given to these species as well as gopher tortoises when proposing relocations on Eglin lands.

As stated in the draft REA, the U.S. Fish and Wildlife Service (USFWS) issued a notification in the Federal Register that no critical habitat would be designated for the reticulated flatwoods salamander on Eglin AFB. Reticulated flatwoods salamander potential habitat exists in the eastern end of the test area. The draft REA indicates a 1,500-foot buffer has been established around potential habitat to protect pond breeding flatwoods salamanders where all vehicle traffic should remain on existing roads and no ground disturbing activities should occur. Given the limited range of the reticulated

flatwoods salamander, every acre of potential habitat is considered vitally important; therefore, it is necessary that habitat protection measures are strictly followed.

As discussed in the draft REA document, safety footprints for certain mission activities under all of the options will likely include recreation areas adjacent to the test area and require temporary closures of these areas. The draft REA indicates that impacts to recreation areas would be minimal because other recreation areas would remain open and because closures would only last for the duration of the mission activity; however, no information was provided on frequency and duration of temporary closures now occurring. Further, TA B-75 is not the only test area expected to increase the number of testing and training missions on the base. As stated on page 4-28, lines 9-13, "Other actions currently undergoing NEPA assessment, such as actions associated with the Eglin Base Realignment and Closure (BRAC) implementation and Alabama Army National Guard training expansion, may also affect access to recreational areas on the Range. Consequently, future conflicts between recreational use and mission use may arise." Further, mission activities are testing increasingly longer-range weapons requiring larger safety footprints that extend over greater amounts of adjacent recreational areas.

Despite concerns over these potential impacts to recreation, it is understood that use of military lands for testing and training activities is a higher priority. Public outdoor recreation is authorized and encouraged only where public use and safety do not interfere with mission activities. Therefore, steps should be taken to reduce the amount of conflict between the two uses, regardless of which option is chosen. For example, specific missions within TA B-75 should be conducted in areas that will produce safety footprints having the least overlap with interstitial recreation areas. If possible, training missions should be scheduled during the middle of the week as opposed to weekends. This will allow recreation areas to be open when more public use is likely to occur. Finally, missions with extensive safety footprints should be planned for summer months where feasible, when hunting is closed and public recreation inland will be at a minimum. When missions do require closure of interstitial recreation areas, as much advanced notice as can be provided should be given to the public to encourage compliance with closure orders.

General Comments

Wetland buffers offer protection not only for water quality but also for movement of wildlife species. A literature review of wildlife movement in relation to wetlands and associated upland habitats show that larger upland buffers need to be applied in order to fully protect the ability of those wetlands to sustain wildlife (U.S. Fish and Wildlife Service 2001- *attachment A*). The FWC recommends that the USFWS guidance be consulted when designing wetland buffers by considering 95- to 330-foot buffers as necessary to maintain the wildlife habitat functions of wetlands depending on the topography.

Summary

The draft REA is determined to be consistent with our authorities under Chapters 379, Florida Statutes, under the Florida Coastal Management Program. However, the Proposed Actions, as detailed in the draft REA have the potential for direct and indirect effects that could adversely impact state-listed species. The Eglin Natural Resources Branch serving as the conduit for proactive management for the Eglin biological resources should allay many fears and alleviate many concerns or impediments to increased mission activities; however, we recommend strong consideration be given to the aforementioned natural resource-specific points of concern.

Thank you for this opportunity to comment. If you would like to coordinate further on the recommendations contained in this report, please contact me at 850-410-5272, or via email maryann.poole@MyFWC.com, and I will be glad to help make the necessary arrangements. If your staff has any specific questions regarding our comments, I encourage them to contact Mr. Paul Scharine (850-627-1773); email paul.scharine@MyFWC.com.

Sincerely,

Mary Ann Poole

Mary Ann Poole
Commenting Program Administrator

map/ps
ENV 1-3-2
Eglin AFB Test Area B-75_2858_062410
Enclosure

Buffers: An Efficient Tool for Watershed Protection

What Are Buffers?

A **buffer** is a strip of naturally vegetated land along a lake, stream, or wetland that provides numerous benefits. Preserving a buffer zone protects water resources from neighboring land uses. Nutrient inputs are of great concern because of their abundant sources (fertilizer, septic tank drain fields, leaking sewage lines, animal waste). Excess nutrients in lakes and estuaries cause toxic algal blooms and depleted oxygen. Natural chemical and biological processes within buffers alter or uptake nutrients and pollutants *before* they enter a water body, thus providing a cost-effective treatment system. Buffers preserve native habitat for wildlife and enhance aquatic habitat. The range of benefits provided by buffers includes:

- Water quality protection
- Erosion control
- Storage of floodwaters and flood damage reduction
- Aquatic habitat enhancement
- Habitat for terrestrial riparian wildlife
- Maintenance of base flow in streams
- Improved aesthetic appearance of stream corridors
- Recreational and educational opportunities

Riparian refers to the land adjoining a body of water, usually a river or stream.

Buffer Width: Bigger is Better

Choosing a buffer width depends on your planning goals. As buffer width increases, the buffer provides greater benefits. As seen in the table below, a 30-foot buffer provides minimal service. At 50 feet, the buffer meets minimum water quality protection recommendations and gives some aquatic habitat benefits. For effective water quality and aquatic habitat protection, a buffer width of 100 feet is needed. Buffers to enhance riparian wildlife should be 300 feet or greater. Special buffer zones may be required to protect vulnerable species. Width should be increased where slope, impervious surface, and soil type reduce buffer effectiveness. The consequences of an inadequate buffer may be an increased need for stormwater ponds, increased flooding, decreased abundance of sportfish, and/or loss of certain species such as some salamanders or crayfish.

Benefit Provided:	Buffer Width: 30 ft	50 ft	100 ft	300 ft	1,000 ft	1,500 ft
Sediment Removal - Minimum	●	●	●	●	●	●
Maintain Stream Temperature	●	●	●	●	●	●
Nitrogen Removal - Minimum		●	●	●	●	●
Contaminant Removal		●	●	●	●	●
Large Woody Debris for Stream Habitat		●	●	●	●	●
Effective Sediment Removal			●	●	●	●
Short-Term Phosphorus Control			●	●	●	●
Effective Nitrogen Removal			●	●	●	●
Maintain Diverse Stream Invertebrates			●	●	●	●
Bird Corridors				●	●	●
Reptile and Amphibian Habitat					●	●
Habitat for Interior Forest Species					●	●
Flatwoods Salamander Habitat – Protected Species						●

Sources

Burke, V.J. and J.W. Gibbons, 1995, Terrestrial Buffer Zones and Wetland Conservation: A Case Study of Freshwater Turtles in a Carolina Bay, *Conservation Biology* 9 (6), pp. 1365-1369.

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Wenger, S., 1999, *A Review of the Scientific Literature on Riparian Buffer Width, Extent and Vegetation*, Office of Public Service and Outreach, Institute of Ecology, University of Georgia, Athens, Georgia.

Wenger, S. and L. Fowler, 2000, *Protecting Stream and River Corridors: Creating Effective Local Riparian Buffer Ordinances*, Carl Vinson Institute of Government, University of Georgia, Athens, Georgia.

For Further Information Contact:

U.S. Fish and Wildlife Service
Panama City Field Office
1601 Balboa Avenue
Panama City, Florida 32405
Tel: (850) 769-0552
Fax: (850) 763-2177
E-mail: FW4_ES_FR_Panama_City@fws.gov

9/13/01 MM/kh/C:/.../buffer fact2.doc

West Florida Regional Planning Council

E-MAIL TRANSMITTAL (S)

TO: Ms. Lauren Milligan, Environmental Manager
STATE CLEARINGHOUSE ▪
Phone: 850-245-2161 Lauren.Milligan@dep.state.fl.us

DATE: 6-28-10

FROM: John Gallagher, Director, Housing & Homeland Security & Emergency Mgmt.
John.Gallagher@wfrpc.org

SUBJECT: **State Clearinghouse Review(s) Transmittals:**

SAI #	Project Description	RPC #
FL201005261C	Eglin AFB Draft Range Environmental Assessment Revision for Test Area B-75	MJ 836 5-28-10

	No Comments – Generally consistent with the WFSRPP
X	See Attached

WFRPC Transportation Senior Planner, Gary Kramer said that, if traffic on 285 became a problem, Eglin would take care of it simply by closing that road.

If you have any questions, please call.

P.O. Box 11399 • Pensacola, FL 32524-1399 • P: 850.332-7976 • 1.800.226.8914 • F: 850.637-1923
4081 East Olive Road, Suite A; Pensacola, FL 32514
651 West 14th Street, Suite E • Panama City, FL 32401 • P: 850.769.4854 • F: 850.784.0456
www.wfrpc.org

West Florida Regional Planning Council

MEMORANDUM

To: Lauren Milligan, Environmental Manager- Florida State Clearinghouse Florida Department of Environmental Protection 5900 Commonwealth Boulevard M.S. 47, Tallahassee, FL 32399

Through: John Gallagher, Comprehensive Planning Director

From: Mary F. Gutierrez, Environmental Planner

Date: Wednesday, June 02, 2010

Subject: Test Area (TA) B-75 Eglin AFB, Okaloosa County, Florida FL201005215261C, RPC#MJ-836-5-28-10

Project: The project is for Eglin AFB proposal to increase (by 300%) future Test Area (TA) B-75 munitions expenditures associated with ground training activities from several new user groups including the 23rd Special Tactics Squadron (STS), the 1st Special Operations Support Squadron (1 SOSS), the 96th Ground Combat Training Squadron (96 GCTS), and the Joint Strike Fighter.

Based on the information provided, the Council would like to make the following recommendations. Please note that the recommendations below are based on the Strategic Regional Policy Plan, established under Chapter 93-206, Laws of Florida. Responses to these recommendations are not required.

Priority 1 - Protection of the Region's Surface Water Resources:

Policy 1.1: Prevent the introduction of hazardous toxins and chemicals into the Region's surface water system by business, industrial, and private interests.

Policy 1.4: Protect all surface waters from pollution and degradation, with particular emphasis on SWIM priority water bodies, Class I and II waters, Outstanding Florida Waters and State Aquatic Preserves.

Recommendation 1: Avoid impacts to surface waters, streams, creeks, steepheads, and tributaries.

Priority 2 – Protection of the Region's Ground Water Resources:

Policy 1.6: Protect groundwater supply identified in groundwater basin resource inventories prepared by the Northwest Florida Water Management District.

Policy 1.16: Prohibit any activities that would introduce wastes or other by-products into the groundwater system via recharge areas.

Recommendation 1: Avoid impacts to surface waters, streams, creeks, steepheads, tributaries and other potential recharge areas.

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651 West 14th Street, Suite E • Panama City, FL 32401 • P: 850.769.4854 • F: 850.784.0456
www.wfrpc.org

Priority 5 - Protection of Endangered, Threatened, and Rare Species:

Goal 1: Protect native species in the Region that are on the Florida Game and Fresh Water Fish Commission, Florida Wildlife Service, Florida Wildlife Commission list of endangered, threatened, and rare species of Florida.

Recommendation 1: Avoid direct, secondary and cumulative impacts to areas known as habitat for endangered, threatened and rare species.

Priority 6 - Land Management and Use

Policy 1.2: Conserve and protect the natural functions of soils, wildlife habitat, floral habitat and wetlands.

Policy 1.4: Protect state or federally owned ecologically sensitive lands from land uses that would impair or destroy the important habitats and plant and animal species occurring on those lands.

Recommendation 1: Avoid direct, secondary and cumulative impacts to areas known as habitat for endangered, threatened and rare species.

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COUNTY: ALL
SCH-106-USAF-EG

DATE: 5/21/2010
COMMENTS DUE DATE: 6/30/2010
CLEARANCE DUE DATE: 7/20/2010
SAI#: FL201005215261C

MESSAGE: 2010-02522

STATE AGENCIES	WATER MNGMNT. DISTRICTS	OPB POLICY UNIT	RPCS & LOC GOVS
ENVIRONMENTAL PROTECTION	NORTHWEST FLORIDA WMD		
FISH and WILDLIFE COMMISSION			
X STATE			

The attached document requires a Coastal Zone Management Act/Florida Coastal Management Program consistency evaluation and is categorized as one of the following:

- _ **Federal Assistance to State or Local Government (15 CFR 930, Subpart F). Agencies are required to evaluate the consistency of the activity.**
- X **Direct Federal Activity (15 CFR 930, Subpart C). Federal Agencies are required to furnish a consistency determination for the State's concurrence or objection.**
- _ **Outer Continental Shelf Exploration, Development or Production Activities (15 CFR 930, Subpart E). Operators are required to provide a consistency certification for state concurrence/objection.**
- _ **Federal Licensing or Permitting Activity (15 CFR 930, Subpart D). Such projects will only be evaluated for consistency when there is not an analogous state license or permit.**

Project Description:

DEPARTMENT OF THE AIR FORCE - DRAFT RANGE ENVIRONMENTAL ASSESSMENT, REVISION 1 FOR TEST AREA B-75 ON EGLIN AIR FORCE BASE - OKALOOSA AND SANTA ROSA COUNTIES, FLORIDA.

To: Florida State Clearinghouse

AGENCY CONTACT AND COORDINATOR (SCH)
3900 COMMONWEALTH BOULEVARD MS-47
TALLAHASSEE, FLORIDA 32399-3000
TELEPHONE: (850) 245-2161
FAX: (850) 245-2190

EO. 12372/NEPA
- ☑ No Comment
- ☐ Comment Attached
- ☐ Not Applicable

Federal Consistency
- ☑ No Comment/Consistent
- ☐ Consistent/Comments Attached
- ☐ Inconsistent/Comments Attached
- ☐ Not Applicable

From:
Division/Bureau: Division of Historical Resources / Bureau of Historic Preservation

Reviewer: Katy Peters — Laura A. Kammerer, Deputy SHPO

Date: 6/23/10 — 6.23.2010

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Air Force Responses to Comments on the Draft REA

Reviewer	Comment	Response
Mary Ann Poole, Commenting Program Admin, Florida FWC, maryann.poole@MyFWC.com, 850-410-5272	Certainly, relocation is a valid option for the gopher tortoise, as Eglin contains many additional acres of quality sandhill habitat. There is, however, little discussion of the commensal species, such as the gopher frog, indigo snake, and pine snake, which use gopher tortoise burrows. Consideration should be given to these species as well as gopher tortoises when proposing relocations on Eglin lands.	Eglin AFB would follow the Gopher Tortoise Permitting Guidelines for relocation of gopher tortoises and commensals. The same consideration would be shown to other commensal species as is afforded to those discussed in detail. Relocation of species would only be performed in accordance with applicable permits. Additional Management Requirements have been added to section 2.5 as pertains to the gopher tortoise and commensal species.
Mary Ann Poole, Commenting Program Admin, Florida FWC, maryann.poole@MyFWC.com, 850-410-5272	As stated in the draft REA, the U.S. Fish and Wildlife Service (USFWS) issued a notification in the Federal Register that no critical habitat would be designated for the reticulated flatwoods salamander on Eglin AFB. Reticulated flatwoods potential habitat exists in the eastern end of the test area. The draft REA indicates a 1,500-foot buffer has been established around potential habitat to protect pond breeding flatwoods salamanders where all vehicle traffic should remain on existing roads and no ground disturbing activities should occur. Given the limited range of the reticulated flatwoods salamander, every acre of potential habitat is considered vitally important; therefore, it is necessary that habitat protection measures are strictly followed.	All applicable protection measures, such as limiting personnel/vehicular traffic and other ground-disturbing activities, would be strictly followed. Additional Management Requirements have been added to section 2.5 to reinforce the importance of such measures.
Mary Ann Poole, Commenting Program Admin, Florida FWC, maryann.poole@MyFWC.com, 850-410-5272	As discussed in the draft REA document, safety footprints for certain mission activities under all of the options will likely include recreation areas adjacent to the test area and require temporary closures of these acres. The draft REA indicates that impacts to recreation areas would be minimal because other recreation areas would remain open and because closures would only last for the duration of the mission activity; however, no information was provided on frequency and duration of temporary closures now occurring.	Thank you for your comment. The frequency and duration of temporary closures varies according to each individual mission. Historical information on the frequency and duration of closures is currently not available.

Reviewer	Comment	Response
Mary Ann Poole, Commenting Program Admin, Florida FWC, maryann.poole@MyFWC.com, 850-410-5272	Despite concerns over these potential impacts to recreation, it is understood that use of military lands for testing and training activities is a higher priority. Public outdoor recreation is authorized and encouraged only where public use and safety do not interfere with mission activities. Therefore, steps should be taken to reduce the amount of conflict between the two uses, regardless of which option is chosen. For example, specific missions within TA B-75 should be conducted in areas that will produce safety footprints having the least overlap with interstitial recreation areas. If possible, training missions should be scheduled during the middle of the week as opposed to weekends. This will allow recreation areas to be open when more public use is likely to occur. Finally, missions with extensive safety footprints should be planned for summer months where feasible, when hunting is closed and public recreation inland will be at a minimum. When missions do require closure of interstitial recreation areas, as much advanced notice as can be provided should be given to the public to encourage compliance with closure orders.	Thank you for your comment. In accordance with the Sikes Act, public access to military lands is "subject to requirements necessary to ensure safety and military security," and management and conservation of military land cannot result in a "net loss in the capability of military installation lands to support the military mission of the installation." Although Eglin makes every effort to minimize impacts to recreation, such as maximizing mission activities in areas that are already permanently closed to the public, mission activities sometimes cannot be mitigated. Coordination between military activities and recreational activities occur in advance to eliminate potential interference and impacts from multiple land usage. In addition, recreational access information is available on a daily basis by calling the Base Information Line.
Mary Ann Poole, Commenting Program Admin, Florida FWC, maryann.poole@MyFWC.com, 850-410-5272	Wetland buffers offer protection not only for water quality but also for movement of wildlife species. A literature review of wildlife movement in relation to wetlands and associated upland habitats show that larger upland buffers need to be applied in order to fully protect the ability of those wetlands to sustain wildlife (U.S. Fish and Wildlife Service 2001 – *attachment A*). The FWC recommends that the USFWS guidance be consulted when designing wetland buffers by considering 95- to 330-foot buffers as necessary to maintain the wildlife habitat functions of wetlands depending on the topography.	Thank you for your comment. The USFWS guidance provided has been reviewed and noted.

Reviewer	Comment	Response
Mary Ann Poole, Commenting Program Admin, Florida FWC, maryann.poole@MyFWC.com, 850-410-5272	The draft REA is determined to be consistent with our authorities under Chapters 379, Florida Statutes, under the Florida Coastal Management Program. However, the Proposed Actions, as detailed in the draft REA have the potential for direct and indirect effects that could adversely impact state-listed species. The Eglin Natural Resources Branch serving as the conduit for proactive management for the Eglin biological resources should allay many fears and alleviate many concerns or impediments to increased mission activities; however, we recommend strong consideration be given to the aforementioned natural resource-specific points of concern.	Thank you for your comment. Please refer to preceding comment responses above regarding comments on natural resource-specific points of concern.
West Florida Regional Planning Council (850)-245-2161	Based on the information provided, the Council would like to make the following recommendations. Please note that the recommendations below are based on the Strategic Regional Policy Plan, established under Chapter 93-206, Laws of Florida. Responses to these recommendations are not required. [see original letter for recommendations]	Thank you for your comment. The recommendations provided have been reviewed and noted.

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