DOE/EA-1606

DRAFT

ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED USE OF SAVANNAH RIVER SITE LANDS FOR MILITARY TRAINING

August 2011

U.S. DEPARTMENT OF ENERGY
SAVANNAH RIVER OPERATIONS OFFICE
SAVANNAH RIVER SITE

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LIST OF ACRONYMS AND ABBREVIATIONS

AQCR	Air Quality Control Region
BDR	Bobby Davis Range (formerly known as the Advanced Tactical Training Academy, the Advanced Tactical Training Area, or ATTA)
BE	Biological Evaluation
BMP	Best Management Practice
CBRN	Chemical, Biological, Radiological, or Nuclear
CBRNE	Chemical, Biological, Radiological, Nuclear, and Explosive Agents
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CERFP	CBRNE Enhanced Response Force Package
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH_4	Methane
CO	Carbon Monoxide
CO_2	Carbon Dioxide
CST	Civil Support Team
CSWTF	Central Sanitary Wastewater Treatment Facility
CWA	Clean Water Act
DHS	Department of Homeland Security
DOA-FG	Department of the Army – Fort Gordon
DOD	Department of Defense
DOE	Department of Energy
DOE-SR	Department of Energy – Savannah River Operations Office
DZ	Drop Zone
EA	Environmental Assessment
EO	Executive Order
FARP	Forward Arming and Refueling Point
FFA	Federal Facility Agreement
FMB	Fourmile Branch

FOB	Forward Operating Base
GA	Georgia
ha	hectare
IED	Improvised Explosive Device
IAG	Interagency Agreement
JSOP	Joint Standard Operating Procedures
kg	kilogram
km	kilometer
l	Liter
LMCP	Logistic Maintenance Collection Point
LTR	Lower Three Runs
LZ	Landing Zone
m	meter
MOU	Memorandum of Understanding
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NO_x	Nitrogen Oxides
N_2O	Nitrous Oxide
NPDES	National Pollutant Discharge Elimination System
NPL	National Priority List
NRHP	National Register of Historic Places
OPFOR	Opposing Forces
PM	Particulate Matter
POLs	Petroleum, Oils, and Lubricants
PPE	Personal Protection Equipment
ppm	parts per million
RCRA	Resource Conservation and Recovery Act
RCW	Red-cockaded Woodpecker
ROI	Region of Interest
ROM	Refueling On the Move
SC	South Carolina

SCDHEC	South Carolina Department of Health and Environmental Control
SCUBA	Self-Contained Underwater Breathing Apparatus
SO_2	Sulfur Dioxide
SPCC	Spill Prevention, Control, and Countermeasures
SRARP	Savannah River Archaeological Research Program
SREL	Savannah River Ecology Laboratory
SRNL	Savannah River National Laboratory
SRS	Savannah River Site
T&E	Threatened and Endangered
TMZ	Territorial Management Zone
TOC	Tactical Operations Center
TSD	Treatment/Storage/Disposal
UAV	Unmanned Aerial Vehicle
UMCP	Unit Maintenance Collection Point
UTR	Upper Three Runs
U.S.	United States
USC	United States Code
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFS-SR	United States Forest Service – Savannah River
USFWS	United States Fish and Wildlife Service
VOC	Volatile Organic Compounds
WMD	Weapons of Mass Destruction
WSI-SRS	Wackenhut Services, Inc. – Savannah River Site Team

1.0 INTRODUCTION

The U.S. Department of Energy (DOE) prepared this environmental assessment (EA) to evaluate potential environmental impacts of proposed and alternative actions regarding the United States Departments of Defense and Homeland Security (DOD and DHS, respectively) use of Savannah River Site (SRS) for military training purposes. Utilization of SRS by the Army would mitigate, in part, a critical training land shortfall, serve to help protect national security, and provide for the prudent multiple use of Federal property. In this National Environmental Policy Act (NEPA) review, the expression 'Army' will be used as an all inclusive term to denote DOD and DHS organizations (e.g., Army, Navy, Marine Corps, Air Force, Coast Guard, National Guard and Reserve units, other military organizations, and civilian employees, sponsors, and contractors associated with or attached to a branch of DOD or DHS) that may use SRS for training purposes.

1.1 Background

In response to the demands of contemporary and future military operating environments, Army training doctrine requires the use of large tracts of contiguous and noncontiguous training lands. However, due to factors such as urban encroachment and lack of resources to purchase additional acreage, the Army currently is experiencing a critical shortfall in training lands. This shortfall has been exacerbated by initiatives such as the Army Transformation, the 2005 Base Realignment and Closure, and the Army's Global Defense Posture Realignment. DOD has estimated that this shortfall in training land will have increased to approximately 5,000,000 acres [2,023,472 hectares (ha)] by 2011.

SRS is a 198,400-acre (80, 291 ha) DOE reservation located along the Savannah River in southwestern South Carolina (Figure 1-1). SRS was established in the early 1950s to produce materials for America's nuclear weapons program. As the Cold War came to an end, cleanup of the Cold War legacy became a more prominent part of the mission. Now, as that mission is maturing and the site looks to the future, SRS is committed to using the Site's workforce, knowledge, and assets to help the nation address its critical missions in environmental stewardship, clean energy, and national security.

SRS possesses large tracts of undeveloped land with road networks, terrain features, vegetative cover, and existing or proposed decommissioned facilities suitable for light infantry and other low-intensity tactical maneuver training activities. Additionally, SRS's central location relative to multiple Army bases (Figure 1-1) creates a unique training opportunity allowing functional groups from multiple bases to converge at SRS for joint training exercises. Use of SRS by the Army for military training purposes would, in part, mitigate the Army's immediate need for additional training lands.

In a Memorandum of Understanding (MOU) dated June 11, 2007, DOE and the Army established a framework for providing Army access to SRS for non-live-fire military tactical maneuver training (DOE 2007). This MOU was implemented under provisions of the Economy Act (31 United States Code [USC] 1535) by an Interagency Agreement

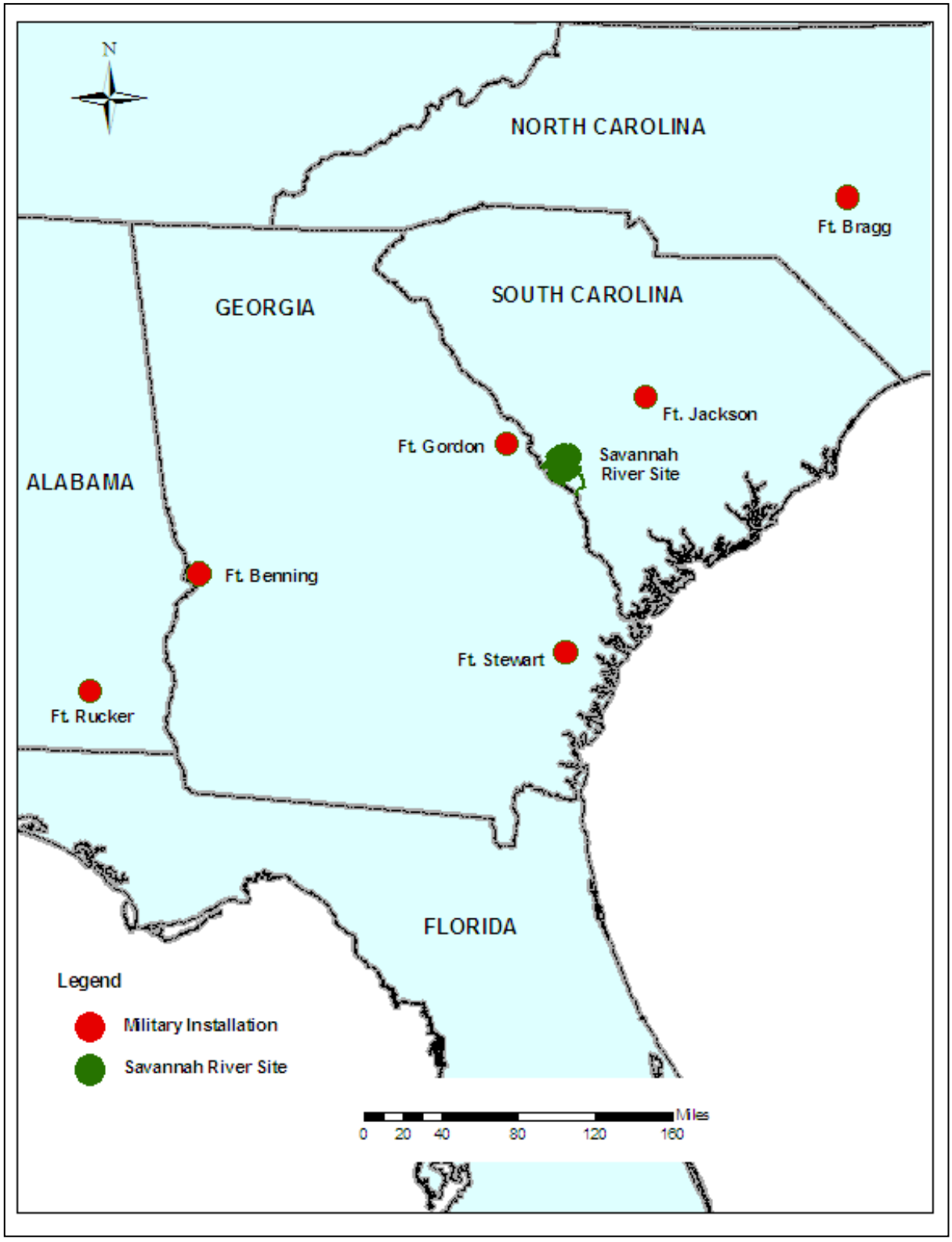

Figure 1-1. Location of SRS Relative to Major Army Installations in the Southeastern United States.

(IAG) entered into by DOE-Savannah River Operations Office (DOE-SR) and Department of the Army – Fort Gordon (DOA-FG) on September 4, 2009 (DOA 2009).

This EA was prepared in compliance with the National Environmental Policy Act (NEPA) of 1969 (42 USC 4321 *et seq*.); the requirements of the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508); and DOE Regulations for implementing NEPA (10 CFR Part 1021). NEPA requires the assessment of potential consequences of Federal actions that may significantly impact or affect the quality of the human environment. Based on the potential for impacts described in this EA, DOE will either publish a finding of no significant impact or prepare an environmental impact statement.

1.2 Purpose and Need for Action

The primary mission of the Army is to provide the forces and capabilities necessary to maintain and protect the nation's security. In partial support of this mission, the Army requires suitable land area to conduct tactical maneuver training activities. There is currently a lack of sufficient land area for these training activities in the continental U.S. and the shortfall is growing. SRS possesses large tracts of undeveloped land suitable for military training. The purpose of the proposed action considered in this EA is to enable the Army to conduct low intensity, non-live-fire tactical maneuver training activities on SRS to support current and future Army mission requirements. The utilization of SRS by the Army would satisfy, in part, its need for additional land area to support its training mission.

2.0 PROPOSED ACTION AND ALTERNATIVES

2.1 Proposed Action: Use of a Proposed Area of SRS for Non-Live-Fire Tactical Maneuver Training

The proposed action is for the Army to use specific areas of SRS for non-live-fire, tactical maneuver training purposes (Figure 2-1). Training activities would involve infantry-based non-live-fire offensive and/or defensive exercises, some in conjunction with air support. Special operation forces and infantry units ranging from squad to battalion size (up to 550 troops) would be involved in these training exercises.

The Army would conduct air combat and logistical support operations using fixed-wing, rotary-wing and tilt-rotor aircraft, in conjunction with certain infantry-based ground exercises. Aircraft would be limited to air space over the proposed Army training area and be prohibited from flying over SRS's administrative and industrial core and the Bobby Davis Range (BDR) (Figure 2-2).

As part of the proposed action, three permanent training facilities would be constructed and operated at SRS, two Forward Operating Bases (FOBs) and one parachute drop zone [DZ]. Proposed locations for these permanent training facilities are identified and considered in the EA (Figure 2-1).

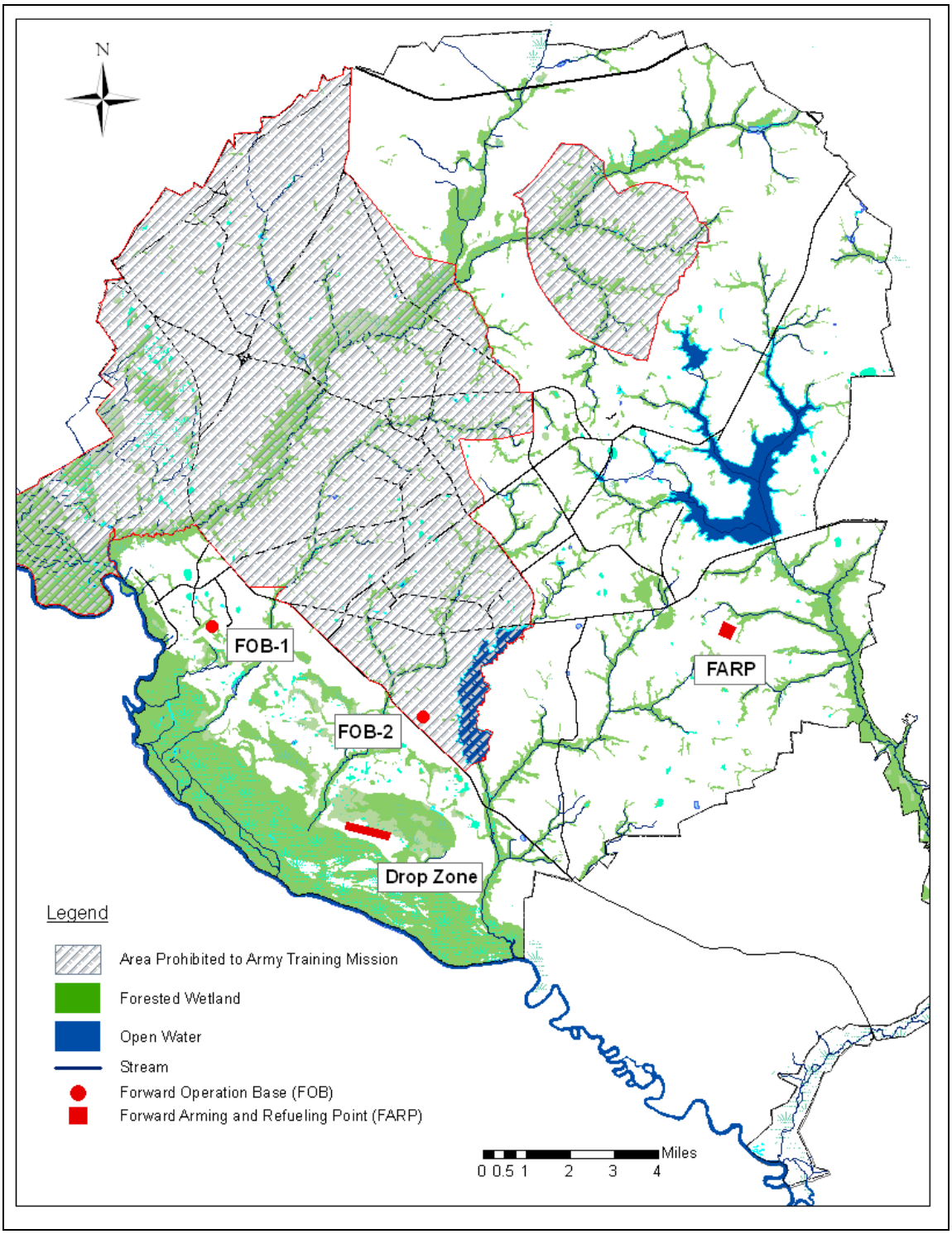

Figure 2-1. Areas Excluded from Army Training Mission and Proposed General Locations of Permanent Training Facilities (Forward Operating Bases (FOBs) and Proposed Drop Zone) on SRS.

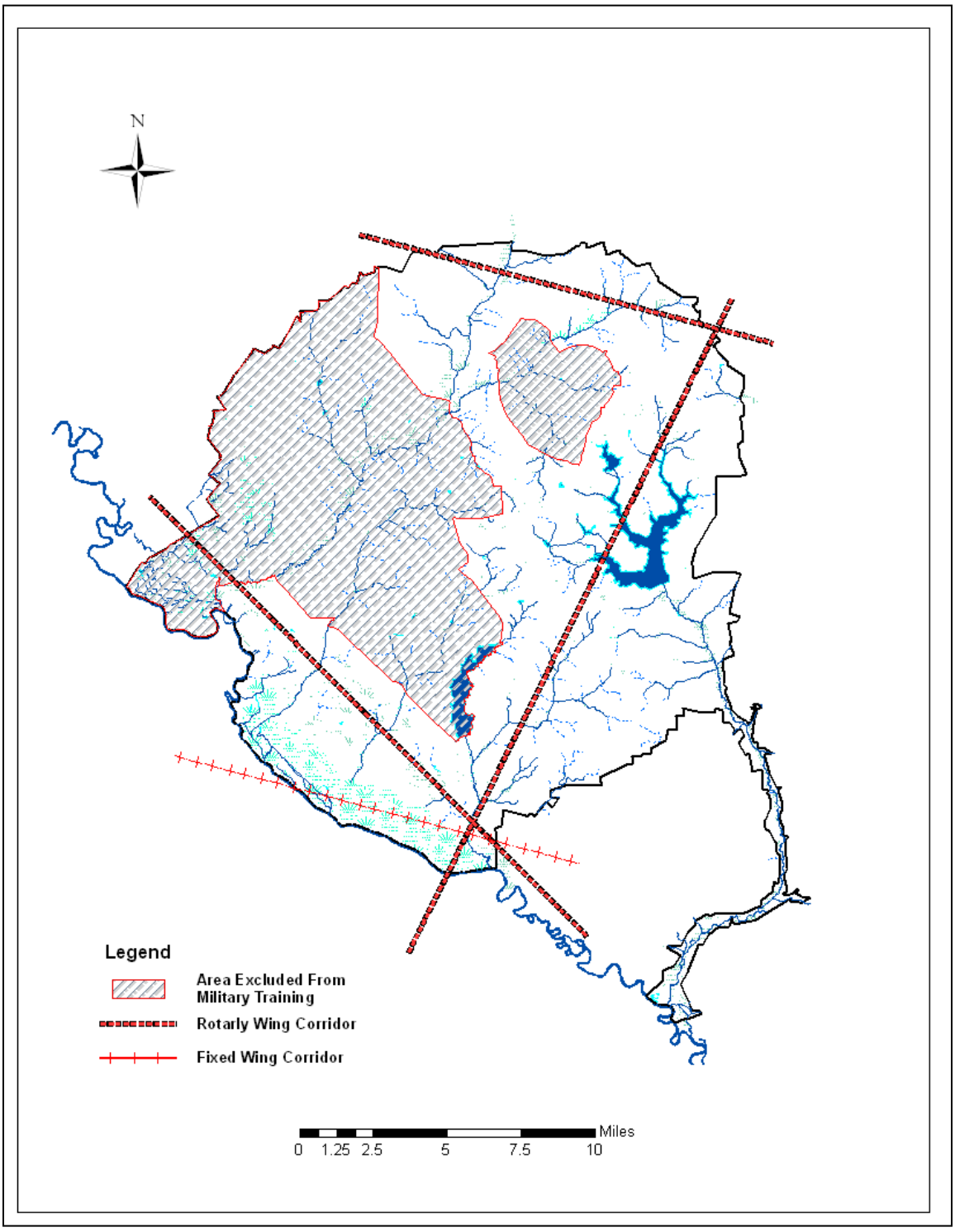

Figure 2-2. Proposed Flight Corridors for Fixed- and Rotary Wing Aircraft Entering and Leaving SRS Airspace.

In addition to the construction of new facilities, the Army also proposes to utilize selected existing SRS industrial facilities (after DOE decommissioning) for urban area and facility seizure operations. These existing facilities include structures within the D-Area powerhouse complex and the 681-1G Pumphouse on the Savannah River (Figure 2-3). D- and G-Area structures that could be used by the Army as part of the proposed action include:

- Primary substation (includes fenced yard and all enclosed structures).
- Secondary transformer station.
- Chemical feed systems.
- Powerhouse and associated maintenance facility.
- Storage buildings.
- Chlorine unloading and storage facility.
- Maintenance building.
- Welding shop.
- Fire water lines.
- Sanitary sewers.
- Transformers for domestic water system.
- Domestic water wells and storage tank.
- Upstream water pumphouse.

Other structures may be made available for use as training facilities after proper coordination between the Army and DOE, and appropriate NEPA review.

No tracked vehicles or live weapons fire would be allowed on SRS. Wheeled vehicles would be limited to existing roadways, bridges, utility rights-of-way, and cleared fields. To reduce the potential transport and/or introduction of noxious weeds to SRS, Army vehicles would be washed prior to their arrival at the site.

As described within this section and in Appendix A, selected tracts of land within the portion of SRS proposed for the Army's use would be off limits for some or all proposed training activities or would not be available at certain times due to environmental restrictions or land use conflicts with DOE missions.

With only a few specific exceptions, training activities would be prohibited on waste units identified in the SRS Federal Facility Agreement (FFA). For example, the Dunbarton Railyard may be used by the Army for unloading and loading of training vehicles, equipment, and supplies, even though it is listed as an a FFA waste unit. Also, training activities would be generally prohibited in L-Lake, PAR Pond, and manmade ponds in the vicinity of R-Reactor and PAR Pond. However, these water bodies may be crossed with vehicular and foot traffic using existing roads. Other exceptions also may include classroom use for lecture or presentation types of instruction, as well as specialized training sponsored by Savannah River National Laboratory (SRNL). DOE may consider other exceptions to training prohibitions in these and other areas on a case-by-case basis, provided DOE clearly demonstrates no significant impact to the human

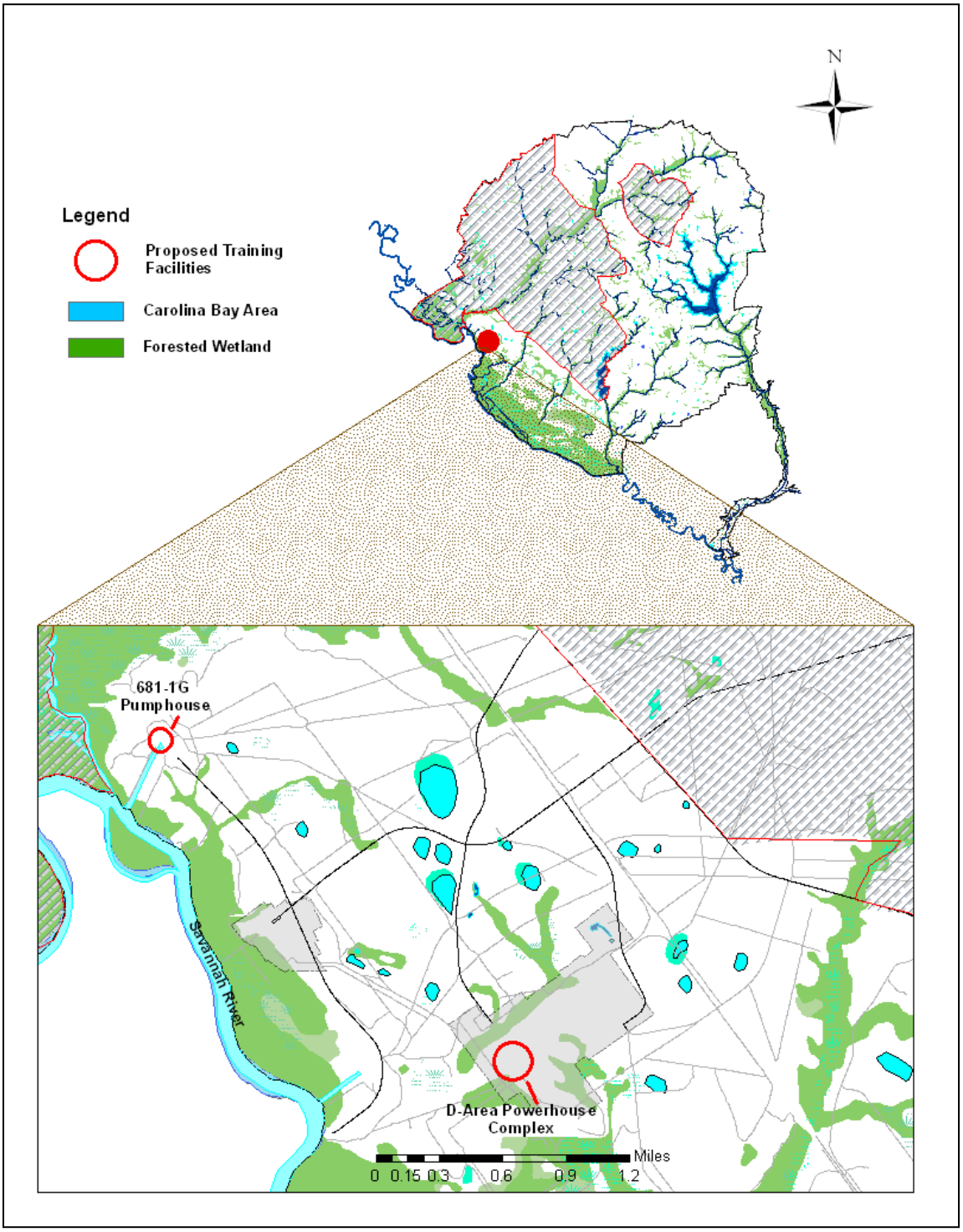

Figure 2-3. Location Map of D-Area Industrial Complex and 681-1G Pumphouse.

environment, determines no impact on waste management or remediation activities, and other protective measures deemed appropriate by DOE are taken.

Stream crossings (by dismounted infantry units only) would be allowed at selected locations pre-approved by DOE. No hardened stream crossings would be constructed at SRS. Most Army exercises could take place adjacent to, but not within, wetlands. Exercises related to refueling activities, FARP and Refueling on the Move (ROM) operations, would take place in locations remote from wetlands to ensure that these areas would not be affected by inadvertent fuel spills. Wheeled vehicles and foot traffic would be allowed to travel through wetlands on established roadways. Foot traffic would also pass through wetlands via firebreaks and along areas of high ground.

Wetland crossing routes and other site-specific restrictions regarding training near wetlands would be identified by DOE and the Army prior to the initiation of each exercise and provided to the training unit during SRS orientation briefings. Army ground maneuver units would not train within 200 feet (61 meters) of SRS streams or lakes. These units would be allowed to cross streams, but only along existing roadways and bridges or at stream crossing points approved by DOE.

The Army would not be allowed to conduct training exercises within selected environmentally sensitive areas such as Carolina bays, American bald eagle (*Haliaeetus leucocephalus*) territorial management zones (TMZs), rare plant ranges, cemeteries, closed or capped waste units, or contaminated areas. Training activities within red-cockaded woodpecker (RCW, *Picoides borealis)* management areas would be conducted in accordance with the 2009 Amendment to Savannah River Site Red-Cockaded Woodpecker Management Plan (USDA 2010).

Proposed training exercises would result in no direct wastewater discharges to State waters or stationary emission sources under the Clean Air Act. The Army would minimize potential leakage of petroleum products into the environment by implementing a Spill Prevention, Control, and Countermeasure (SPCC) Plan, including the regular inspection of vehicles and aircraft, conducting routine maintenance of equipment, and the use of drip pans when vehicles are at rest. Radiological, biological, or chemical test sources would be used during Army training activities infrequently and only in conjunction with force protection and weapons of mass destruction (WMD) related exercises. The use of these sources would be approved and monitored by DOE-SR and SRNL personnel. The only training activity which would necessitate the clearing of forestland (approximately 250 acres [101 ha]) would be the construction and operation of a DZ. Implementation of this training activity would require a site construction permit and possible coverage under SRS's National Pollutant Discharge Elimination System (NPDES) Stormwater General Permit.

Prior to the scheduling and conduct of training events, DOE and the Army would evaluate proposed training exercises and areas. This evaluation would identify potential land use conflicts, such as the presence of sensitive environmental resources and/or controlled areas which would require avoidance.

Prior to the initiation of each training event, the Army would prepare a site-specific training plan designed to protect and sustain the human environment, and DOE would document site conditions of the training area. Subsequent to each training event, DOE would assess the training site and determine what actions would be required to mitigate any observed environmental damage. The Army would be responsible for restoring impacted SRS resources to their documented pre-training state and DOE would determine if the mitigation actions taken are adequate. The construction of permanent or semi-permanent training facilities (i.e., the DZ and FOBs) would not be allowed until DOE is assured by the Army that adequate funding is available for construction, maintenance, and environmental mitigation.

Guidelines, procedures, and processes governing the Army's use of SRS for the proposed military training mission are contained in the Joint Standard Operating Procedures (JSOP) developed by the DOE and the Army (see Appendix A). Military training activities initially would involve only small units located in well-defined, easily controlled areas. Using this approach, DOE would be able to test the effectiveness of the JSOP and other management systems and tools designed to protect the human environment and prevent Army interference with SRS missions. Larger scale training activities would be allowed only after these objectives have been met. DOE anticipates that the number and duration of Army training events at SRS over the period of a year would vary. The impacts of these multiple training events on SRS's environment and infrastructure would be monitored closely by DOE to protect the human environment and ensure DOE's ability to carry out its mission. Activities related to the transport and staging of troops outside of SRS are not part of the proposed action and therefore not considered in this EA. Redacted information in the JSOP consists of personally identifiable information, general military operational information, and emergency military and SRS information which DOE believes is not relevant to assessment of the impacts of the proposed action on the environment.

2.1.1 Non-Live-Fire Tactical Maneuver Training Activities

The proposed action is comprised of 26 training activities, numbered sequentially and described below. Other similar low intensity, non-live-fire, tactical maneuver training activities not specified in this EA would be considered to be within the bounds of this analysis, and would be subject to the planning process described in the JSOP (Appendix A) prior to each exercise.

2.1.1.1 Reconnaissance and Surveillance Operations

This training activity involves the acquisition of field data and intelligence regarding enemy forces, terrain, and routes. Equipment utilized would include wheeled tactical vehicles (e.g., the Stryker, high mobility multipurpose wheeled vehicles, all-terrain vehicles, motorcycles), unmanned aerial vehicles (UAVs), and helicopters. The UAVs may be launched from open fields, vehicles, roadways, or offsite locations. Less than 100 troops (mechanized and/or dismounted) would be involved in this activity. Blank ammunition and pyrotechnics may be used. Troops would be inserted into the field via

wheeled tactical vehicles, helicopters, and parachute. The land area required for this activity may be greater than 5.0 acres (2.0 ha), depending upon the training scenario implemented. As part of this training activity, units may need to cross streams and contiguous wetlands to navigate to other training areas. These crossings would involve dismounted troops only and be conducted at locations previously approved by DOE.

2.1.1.2 Temporary Forward Arming and Refueling Point

A FARP is a facility designed to rapidly rearm and refuel aircraft and vehicles during tactical combat operations, with a manpower requirement of 30-40 troops. Activities performed at a FARP would include minor crew-level aircraft/vehicle maintenance and major emergency repair work. Equipment utilized would include wheeled tactical vehicles, helicopters, generators, fuel bladders, tents, personal protection equipment (PPE) and portable toilets. Fuel and other supplies would be delivered to the FARP by fuel trucks and helicopters. The Army would minimize the leakage of petroleum products into the environment by implementing a SPCC Plan, including the regular inspection of vehicles and aircraft, conducting routine maintenance of equipment, and the use of drip pans when vehicles are at rest.

The Army is proposing to establish multiple temporary FARPs in previously cleared areas of SRS. A FARP may be located anywhere within the proposed Army training area as long as it is (a) accessible by road, (b) at least 200 feet (61 meters) from any stream, pond/lake, wetland, or groundwater well and (c) not within an area which is controlled or possesses selected sensitive environmental and/or cultural resources. One site proposed as a temporary FARP is a previously cleared area of 5.0-6.0 acres (2.0-2.4 ha) located along Road B-6, and is periodically used by the United States Forest Service-Savannah River (USFS-SR) as a heliport (Figure 2-4).

A temporary FARP would operate for less than two weeks, and would not require new facilities or changes in land use. Temporary FARPs can be operated in any open area that can accommodate both vehicle and helicopter access; road corridors are typically used to establish temporary FARPs.

2.1.1.3 Refuel on the Move Operations

This training activity would utilize 15-20 troops for the rapid road-side refueling of vehicles at a temporary refueling site. Equipment utilized would include wheeled tactical vehicles, generators, fuel bladders, PPE and portable toilets. Fuel would be delivered to the ROM site by Army trucks. The Army would minimize the leakage of petroleum products into the environment by implementing a SPCC Plan, including the regular inspection of vehicles and aircraft, conducting routine maintenance of equipment, and the use of drip pans when vehicles are at rest. A ROM operation may be located anywhere within the proposed Army training area as long as it is (a) accessible by road, (b) at least 200 feet (61 meters) from any stream, pond/lake, wetland, or groundwater well and (c) not within an area which is controlled or possesses selected sensitive environmental and/or cultural resources.

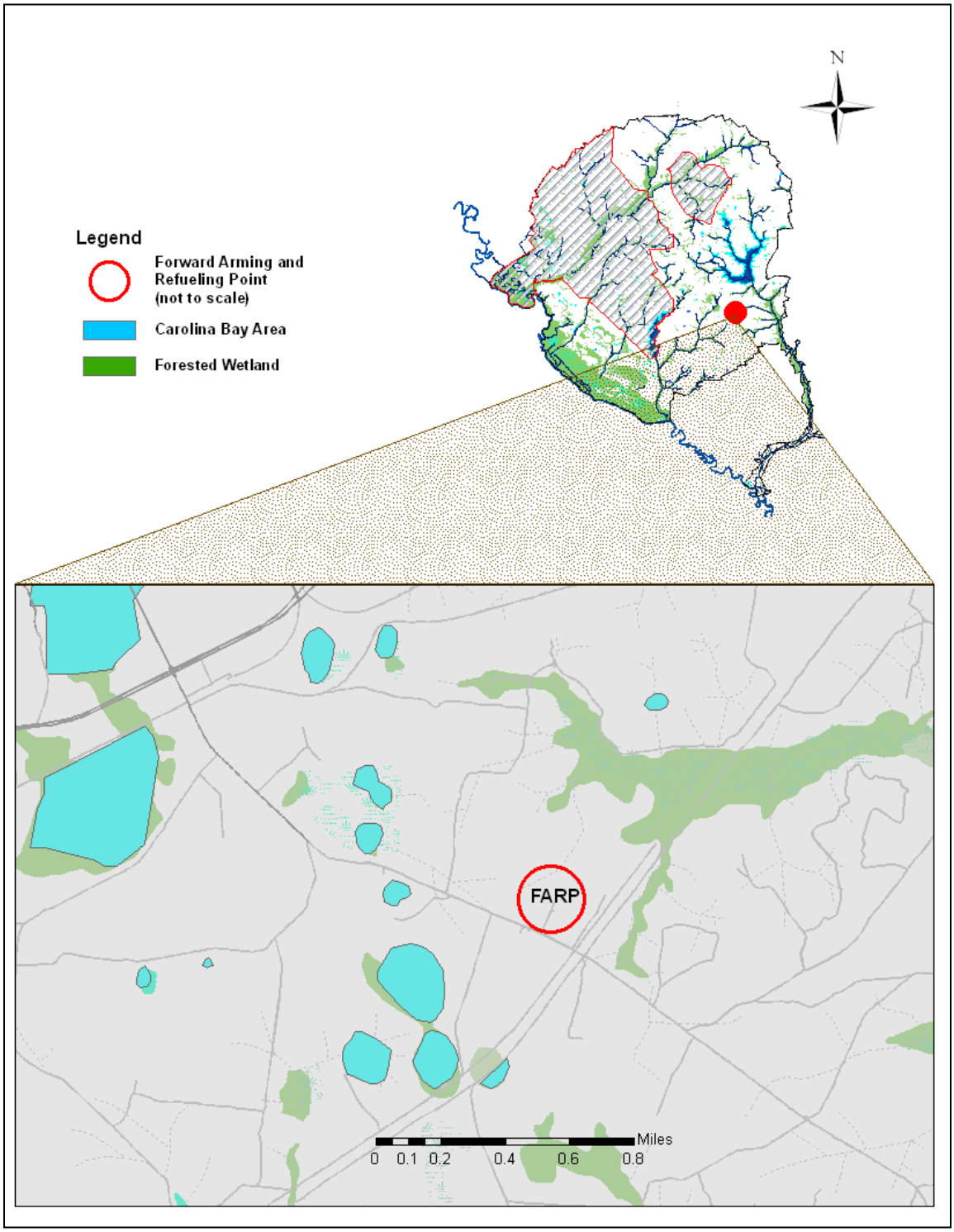

Figure 2-4. Location of a Proposed Temporary Forward Arming and Refueling Point (FARP) on SRS.

2.1.1.4 Mobile Resupply Operation

A Mobile Resupply Operation would use a team of 30-40 troops to establish a temporary combat support staging area for the stockpiling, loading, and unloading of ammunition and supplies used to support offensive air and ground operations. Equipment utilized would include helicopters for movement of sling-borne loads, wheeled tactical vehicles, forklifts, and portable toilets. Any cleared and level area of less than 5.0 acres (2.0 ha) with adequate access for wheeled vehicles and helicopters could support this exercise.

2.1.1.5 Chemical, Biological, Radiological, Nuclear Defense Operations

These training exercises would involve up to 300 troops in the preparation for and response to simulated chemical, biological, radiological, or nuclear (CBRN) attack, with an emphasis on detection, decontamination, field sanitation, and medical support activities. No radiological, biological, or chemical test sources would be utilized to alarm detection devices equipment during execution of this training activity unless approved and monitored by DOE-SR and SRNL. Equipment utilized would include wheeled tactical vehicles, trailers, generators, sprayers, PPE, water bladders, detection equipment, and portable toilets. Simulation may use blank ammunition, pyrotechnics, and obscurants. The scope of this training activity also would include exercises in camouflaging equipment. However, the Army would be prohibited from cutting or otherwise removing or harming SRS vegetation for camouflage purposes.

2.1.1.6 Convoy Operations

Convoy Operations would involve training 30-150 troops on the transport of troops and supplies to locations where helicopters cannot land, and would include defensive operations against ambush, improvised explosive devices (IEDs), or similar threat scenarios in field and urban environments. Equipment used in this exercise would include trucks and other wheeled tactical vehicles, pyrotechnics to simulate IEDs, and blank ammunition for simulated ambushes. This activity could be sited on any road within the proposed Army training area. The land requirement for this exercise would depend on the number of troops involved in the training scenario.

2.1.1.7 Casualty Evacuation Operations

Casualty Evacuation training would use 30-150 troops for the removal and transport of casualties from the battlefield to medical facilities, and would include the establishment of casualty collection points and ambulance exchange points. Equipment used in this training exercise would include military ambulances and helicopters. Vehicles other than ambulances also may be used to simulate emergency aid vehicles. Blank ammunition and pyrotechnics may be used to simulate battlefield conditions. The space requirement for this activity would be less than 5.0 acres (2.0 ha).

2.1.1.8 Towed Field Artillery Operations

This training activity would involve up to 350 troops using towed field artillery pieces to provide fire support for forward combat forces. Equipment utilized would include wheeled tactical vehicles, fixed and rotary wing aircraft, towed cannon, blank ammunition, pyrotechnics to simulate artillery fire, and portable toilets. Artillery pieces would be towed or airlifted into the training area. The space requirement for this activity would be less than 5.0 acres (2.0 ha).

2.1.1.9 Tactical Operations Center

This training activity would involve the establishment of a Tactical Operations Center (TOC) as the temporary command and control hub for company, battalion and brigade size field operations. The TOC, which would be located safely away from the "forward line of battlefield operations" as defined by the training scenario, is where most of the planning, staff coordination, and monitoring of key events occurs. TOC training typically involves approximately 100 troops, for a maximum of two weeks. Battalion and brigade TOCs may relocate two to three times over a period of two weeks. Company TOCs are smaller with more frequent relocations. Equipment needed for this exercise would include wheeled tactical vehicles, helicopters, tents, generators, trailers, antennae, field kitchens, and portable toilets. Opposing forces using blank ammunition and pyrotechnics may be used to attempt the infiltration of TOC locations as part of the training exercise. The space requirement for this activity would be less than 5.0 acres (2.0 ha).

2.1.1.10 Forward Operating Base

This training activity would involve 150-250 troops in the establishment of a FOB, a secure, reinforced position away from the battle area designed to support tactical operations and repel enemy ground assault. A FOB typically consists of an assembly of gabions [collapsible wire mesh container and heavy duty fabric liner filled with sand (a.k.a. Hercules Engineering Solutions Consortium barriers)], concrete barriers, gates, watchtowers, bunkers, and other force protection infrastructure. Sand for fill would be acquired from onsite SRS quarries. FOB infrastructure may include a field hospital, command post, mess facilities, ammunition storage, tents, fuel points, and arms rooms. The space requirement for this activity would be less than 5.0 acres (2.0 ha). Equipment utilized would include wheeled tactical vehicles, tents, generators, trailers, antennae, field kitchen, blank ammunition, pyrotechnics to simulate artillery fire, and portable toilets.

The two candidate FOB sites considered in this EA are FOB-1 in the vicinity of the D-Area Powerhouse and FOB-2 on the site of decommissioned Gun Site 51 west of L-Lake (Figures 2-5 and 2-6, respectively). Construction of FOB-1 would occur after decommissioning of the D-Area industrial complex (projected for 2016).

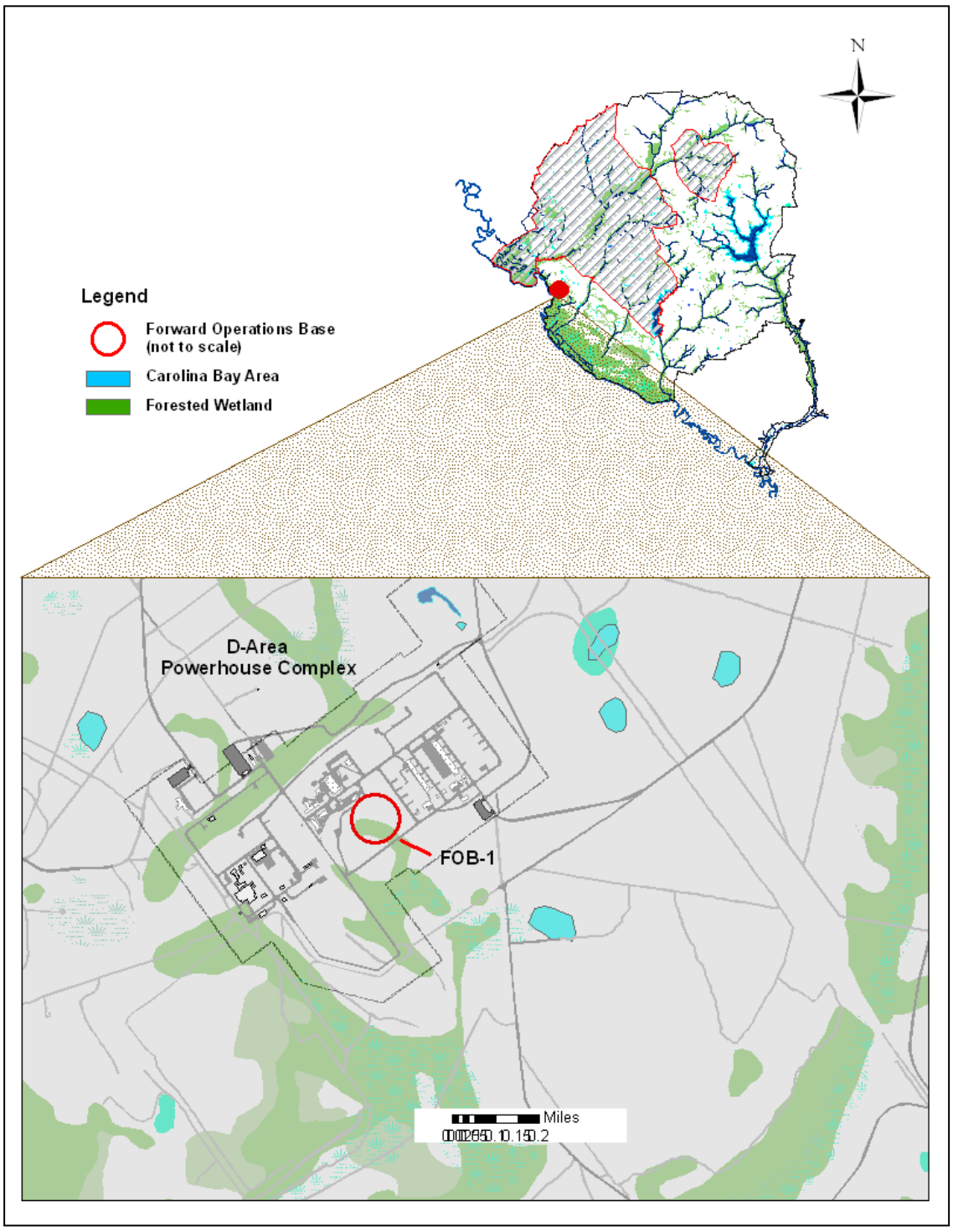

Figure 2-5. Location of the Proposed Permanent Forward Operation Base (FOB-1) in D-Area on SRS.

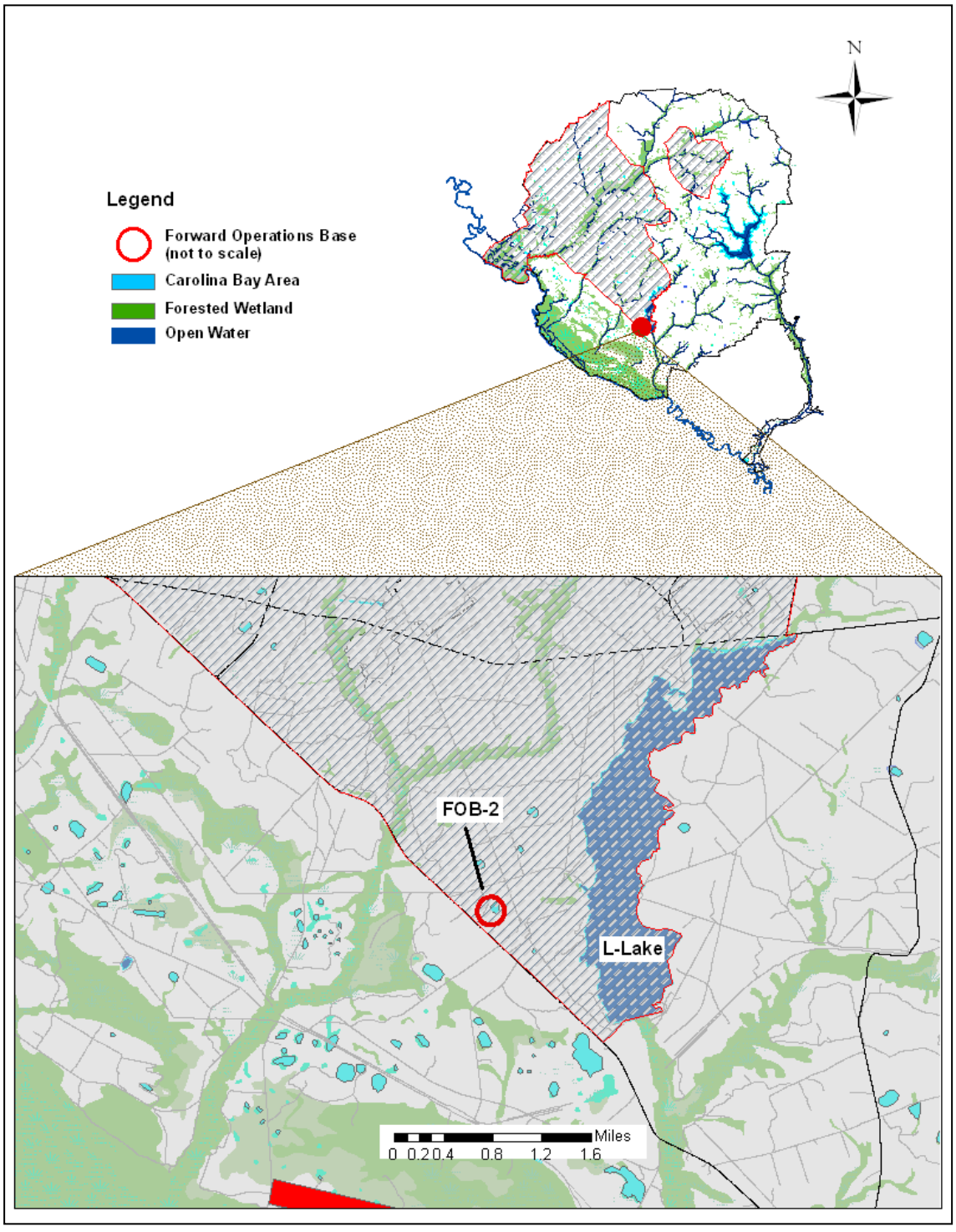

Figure 2-6. Location of the Proposed Forward Operation Base (FOB-2) Near L-Lake on SRS.

Implementation of this training activity would result in construction-related activities and a new training facility. There would be no change in land use because both FOB-1 and FOB-2 are proposed for construction on previously developed sites.

2.1.1.11 Security Operations

This training activity would involve 50-100 troops in the implementation of security-related activities in static locations, including securing prisoners-of-war, guarding command posts, and conducting foot patrols local to the static location. Equipment used would include wheeled tactical vehicles, tents, generators, portable toilets, blank ammunition, and pyrotechnics. The space requirement for this activity would be less than 5.0 acres (2.0 ha).

2.1.1.12 Defensive Operations

This training activity would involve 150-550 troops in the implementation of deliberate and hasty defensive operations. A deliberate defense is well-planned and coordinated as part of a permanent defensive network, and includes manmade obstacles such as concertina wire and surface laid inert training mines. Hasty defenses are organized while on the offense and in contact with the enemy or when contact is imminent and reaction time is limited. Examples of hasty defense operations include hastily laid surface mines, concertina wire, man-made obstacles, and pre-plotted Artillery Target Reference Points.

No trenches, foxholes or other forms of excavation would be involved in this training activity. Helicopters may be used in overwatch mode or to move troops to alternate locations. Equipment utilized would include wheeled tactical vehicles, helicopters, concertina wire, blank ammunition, pyrotechnics (training mines, simulated artillery fire, obscurants), and portable toilets. The land requirement for this exercise would depend on the number of troops involved in the training scenario.

2.1.1.13 Opposing Forces Operations

Opposing Forces (OPFOR) operations would involve 30-50 troops in simulations of enemy-friendly contacts. Enemy threats include infantry, guerillas, insurgents, air attack, and simulated IEDs. Friendly forces include both defensive and offensive operations. Examples of OPFOR operations include emplacement of simulated IEDs, assault upon a convoy, assault on fixed positions such as FOBs and TOCs, simulated suicide bombers, and light infantry enemy elements placed in a defensive or offensive posture.

Equipment utilized would include wheeled tactical vehicles, civilian vehicles, helicopters, blank ammunition, pyrotechnics (simulated IEDs, simulated artillery fire, and obscurants), and portable toilets. The land requirement for this exercise would depend on the number of troops involved in the training scenario.

As part of this training activity, troops may need to cross streams and contiguous wetlands to navigate to other training areas. These crossings would involve dismounted troops and be conducted only at locations previously approved by DOE.

2.1.1.14 Unit Maintenance Collection Points (UMCP) and Logistic Maintenance Collection Points (LMCP)

A Unit Maintenance Collection Point (UMCP) is a temporary facility providing maintenance and basic repairs to wheeled tactical vehicles. A Logistic Maintenance Collection Point (LMCP) is a temporary facility providing logistical support (LMCP) to the same vehicles. This training activity would have troops establish UMCPs and LMCPs under field conditions.

During rapid moves, the UMCP would conduct only essential repairs and simple recovery of disabled or battle damaged equipment. A UMCP may also serve as an alternate command post or as a staging area where vehicles are positioned at a fixed location in preparation for an operation.

Equipment utilized would include wheeled tactical vehicles, specialized maintenance recovery vehicles, generators, tents, PPE, and portable toilets. A UMCP or LMCP may move two to three times during a two week training event. Up to 550 troops would be involved in this training activity.

2.1.1.15 Tactical Offensive Operations

Tactical Offensive Operations would involve the tactical movement of 50-550 mounted and/or dismounted infantry to attack enemy forces. Dismounted troops would move cross-country off-road and via unimproved roads and fire breaks when available. Mounted troops would move cross-country using roads. As part of this training activity, units may need to cross streams and contiguous wetlands to navigate to other training areas. These crossings would involve dismounted troops and be conducted only at locations previously approved by DOE. Equipment utilized would include wheeled tactical vehicles, aircraft, blank ammunition, pyrotechnics (simulated artillery fire, obscurants), and portable toilets. The land requirement for this exercise would depend on the number of troops involved in the training scenario.

2.1.1.16 Movement and Assembly of Troops

This training activity would involve the administrative and tactical movement of 50-550 mounted and dismounted troops to assembly areas (see Section 2.1.1.17). Dismounted troops would move cross-country off-road and via unimproved roads and fire breaks when available. Mounted troops would move cross-country using roads. As part of this training activity, units may need to cross streams and contiguous wetlands to navigate to other training areas. These crossings would involve dismounted troops and be conducted only at locations previously approved by DOE. Equipment utilized would include wheeled tactical vehicles, aircraft, and portable toilets. The land requirement for this exercise would depend on the number of troops involved in the training scenario.

2.1.1.17 Tactical Assembly Area Operations

This training activity would involve 50-550 troops in the establishment of an assembly area located “beyond the reach of light artillery,” as defined by the training scenario. The

tactical assembly area is where units can make final preparations, such as pre-combat checks and inspections, test fire weapons, perform minor equipment and vehicle maintenance, and eat and sleep before moving to the line of departure. Equipment utilized would include wheeled tactical vehicles, generators, aircraft, and portable toilets. The land requirement for this exercise would be less than 5.0 acres (2.0 ha).

2.1.1.18 Urban/Facility Seizure Operations

Urban/Facility Seizure Operations typically involve 25-100 troops from special operations units in close-quarter combat, forced entry, and facility seizure operations in an 'urban' environment. Equipment utilized would include wheeled tactical vehicles, aircraft, watercraft, portable toilets, blank ammunition and pyrotechnics (e.g., strand detonation cord). This training activity would be conducted within selected decommissioned industrial facilities located in D-Area (e.g., the powerhouse) and the 681-1G Pumphouse (Figure 2-3). However, the overall land requirement for this exercise would depend on the number of troops involved in the training scenario.

2.1.1.19 Air-Land Operations

Air-Land Operations would involve approximately 30-550 troops in the insertion of troops and equipment by helicopters onto DZs, Landing Zones (LZs), and urban locations. In addition to traditional disembarking from a landed helicopter, troop insertion also may be accomplished by exiting from helicopters via rappelling, fast rope, specialized delivery/extraction harnesses, and ladders.

LZs used during this training activity must possess sufficient cleared area to accommodate helicopter landings. There are multiple cleared parcels of sufficient land area within the proposed Army training area which would be suitable for use as a LZ. These locations include sites previously clear-cut by USFS, sites used by USFS as heliports, and a number of decommissioned facility sites which have been cleared to their concrete slabs. Roads with sufficiently clear right-of-way could also serve as a LZ.

Equipment utilized would include helicopters, wheeled tactical vehicles, pyrotechnics (simulated artillery fire and obscurants), and portable toilets. This activity could be sited on any clear-cut area or road with sufficient cleared right-of-way to accommodate the use of helicopters. The overall land requirement for this exercise would depend on the number of troops involved in the training scenario.

2.1.1.20 Air-Water Operations

Air-Water Operations would involve up to 50 troops in the insertion of troops and watercraft into the Savannah River by helicopter. Representative activities include helocast operations where rubber raiding craft are inserted into the river, assorted water craft activities, and self-contained underwater breathing apparatus (SCUBA) operations. In addition to water insertion operations on the river, there are related training and support activities which would take place onshore. Equipment utilized would include helicopters, military vehicles (support and retrieval), rubber watercraft, and SCUBA.

Subsurface detonation of pyrotechnics would be prohibited. However, blank weapons fire and pyrotechnics on the river's surface would be allowed. Expended ammunition residue such as brass, links, and other solid debris would be kept inside boats and aircraft to the extent practicable. There would be no discharges to State waters resulting from this training activity.

Air-water operations would be limited to approximately 11 miles (17 kilometers [km]) of the Savannah River and contiguous SRS shoreline in the general vicinity of D-Area (Figure 2-7). Within this corridor, the overall land requirement for this exercise would depend on the number of troops involved in the training scenario. Use of SRS streams, ponds, and surface impoundments for this training activity would be prohibited.

2.1.1.21 Airborne Operations

This training activity would involve 25-550 troops in the insertion of troops and equipment by parachute (static line or military free fall) onto a DZ. Minimum altitude for cargo and airborne operations would be 1,500 feet (457 meters). Equipment utilized would include helicopters, fixed-wing and tilt-rotor aircraft, military vehicles (for support and recovery of chutes), blank ammunition, pyrotechnics (simulated artillery fire, obscurants), and portable toilets. Implementation of this training activity would result in construction-related activities such as land clearing and grading, a change in land cover (forest to grassland), and a new DZ facility at the Water Gap site (Figure 2-8).

2.1.1.22 Air Support Operations

This training activity would involve 25-550 troops in the use of air resources for the movement or infiltration/exfiltration of troops (air assault), combat search and rescue missions, equipment delivery and pickup, surveillance and reconnaissance, radio retransmission, and close air support (air attack). Although this training activity primarily would involve airborne activity, there would be related ground based training and support activities.

Equipment utilized would include helicopters, fixed-wing and tilt-rotor aircraft, UAVs, wheeled tactical vehicles, and pyrotechnics (simulated artillery fire, obscurants). Certain actions would require an existing clearing large enough to accommodate the use of helicopters. However, the overall land requirement for this exercise would depend on the number of troops involved in the training scenario.

2.1.1.23 Tactical Communication Operations

Tactical Communications operations would involve up to 250 troops in electronic communications and transmission of data between onsite and offsite units using amplitude modulation/frequency modulation, microwave, satellite, and aerial radio

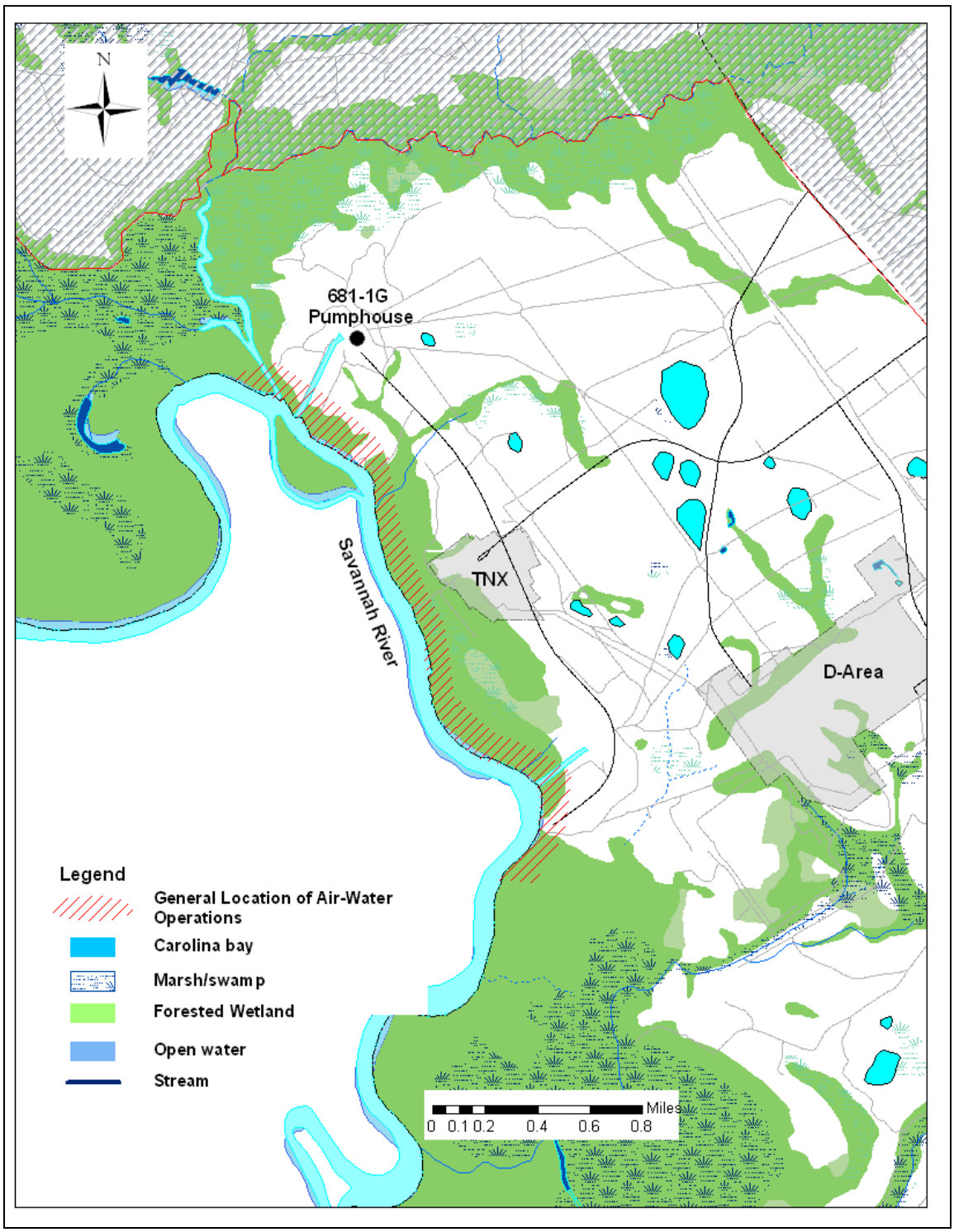

Figure 2-7. General Location Map of Proposed Air-Water Operations on the Savannah River and Contiguous SRS Shoreline.

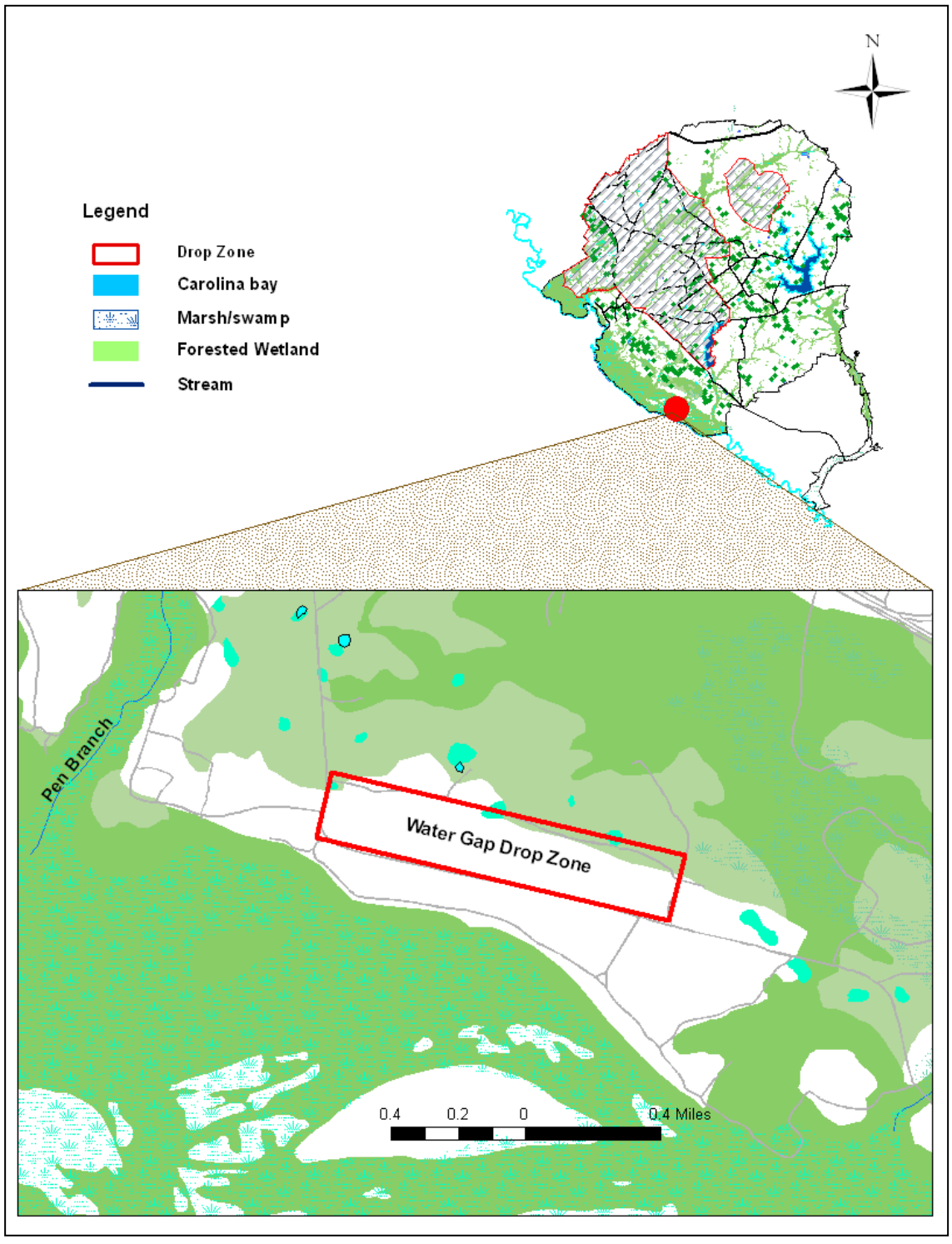

Figure 2-8. Location Map of the Proposed Permanent Water Gap Drop Zone.

retransmission via aircraft. Improperly planned electronic transmissions generated by this training activity could potentially interfere with SRS operations. The Army would coordinate with DOE to ensure that the frequency bands used do not interfere with SRS communications and operations. Electronic warfare (e.g., radio jamming) would not be conducted by the Army on SRS. There would be no interference with radio-tagged wildlife tracking activities conducted at SRS.

Equipment utilized would include ground and vehicle mounted antennas, aircraft, dishes, radio systems, cable, tents, generators, trailers, field kitchens, and portable toilets. The land requirement for this exercise would be less than 5.0 acres (2.0 ha).

2.1.1.24 Civil Support Team and Chemical, Biological, Radiological, Nuclear, and Explosive Agents Enhanced Response Force Package Operations

The Civil Support Team (CST) and the Chemical, Biological, Radiological, Nuclear, and Explosive Agents (CBRNE) Enhanced Response Force Package (CERFP) Operations training would involve up to 280 troops in specialized units responding to simulated manufacture of WMD agents or areas contaminated by simulated WMD agents. Activities performed by the CST would include establishment of an operational footprint, site characterization, sample collection, personnel decontamination, and analysis of simulated agents in a mobile laboratory. Activities performed by the CERFP would include establishment of an operational footprint, search and extraction of victims from a notionally contaminated zone, mass personnel decontamination, triage, and preparation for onward movement to medical facilities.

Equipment utilized would include wheeled vehicles (Suburban, Dually Pickups, and General Motors Corporation 6500 medium-duty trucks), closed cargo trailers, man-portable detection equipment, generators, personal protective equipment, personnel decontamination systems, and other related mission-essential equipment. Construction of a permanent rubble pile would be required to simulate a collapsed structure.

No radiological, biological, or chemical test sources would be utilized to alarm detection equipment during the conduct of this training activity, unless approved and monitored by DOE-SR and SRNL. The personnel decontamination process for both the CST and CERFP would involve clean water. The decontamination process would not differ between simulated chemical, biological, or radiological agents. Simulated agents would not contact the decontamination water. If DOE-SR and SRNL were to approve a chemical, biological, or radiological source for training use, the same decontamination process would be used as for the simulated agents. The Army would rely on DOE-SR and SRNL to monitor the used decontamination water for potential presence of the source, and to properly dispose of used decontamination water containing a source. Water used in this training exercise would come from SRS domestic water flush hydrants identified in the JSOP (Appendix A) or water derived from Water Purification Operations described in Section 2.1.1.25 of this EA.

The training location for this activity would vary from clear, undeveloped areas to an urban environment. The land and facility requirements for this type of exercise would depend on the objectives and number of troops involved in the training scenario.

2.1.1.25 Water Purification Operations

Water purification operations would involve up to 150 troops in the production of potable water using four processes: 1) coagulation and flocculation, 2) filtration, 3) reverse osmosis, and 4) disinfection. Chemicals utilized for disinfection purposes would include chlorine, ozone, and chlorine dioxide. Water purification units would provide clean drinking water to troops in the field, as well as clean water for simulated decontamination operations.

Raw surface water would be withdrawn only from the Savannah River. Gas, diesel, or electric pumps would be used to withdraw water for purification. Clean water would be stored in collapsible water tanks and/or distributed to the troops.

Equipment utilized would include purifiers, generators, pumps, hoses, water storage tanks/vessels, tank trucks, water trailers, tents, and aircraft. Chemical residues resulting from the water purification process would be collected by the Army and transported offsite for proper disposal. The land requirement for this exercise would be less than 5.0 acres (2.0 ha).

2.1.1.26 Helicopter Bucket Operations

Helicopter bucket training would involve the acquisition of water from the Savannah River using a bucket slung beneath a helicopter. The water would then be transported by the helicopter and released over ground or water targets. Targets must be pre-approved by DOE. Helicopter bucket operations would be conducted to reinforce the helicopter crew skills necessary to support State and Federal wildland fire-fighting efforts. This would be an airborne operation with minor land-based support elements. Land requirements for this activity would be less than 5.0 acres (2.0 ha). One to six helicopters and related support equipment (one fuel tanker per helicopter) would participate in this training activity, which would involve up to 25 troops. A temporary FARP would be used for refueling purposes, or fuel may be acquired from a local commercial airport.

2.2 'No Action' Alternative

The 'No Action' alternative represents the status-quo scenario. Under the 'No Action' alternative, the Army would not establish and conduct formal, long-term training missions at SRS. Consequently, the Army would not mitigate, at least in part, its training land shortfall in the continental U.S. In the past, SRS has supported periodic use by Special Operation Forces and other military units for limited, short-term, non-live-fire tactical training exercises. Prior to their advent, each of these training events were individually reviewed under NEPA and categorically excluded from further NEPA review. Under the 'No Action' alternative, DOE expects that this baseline level of military training at SRS would continue.

2.3 Alternatives Considered but Eliminated from Review

2.3.1 Alternative Action: Use of a Proposed Area of SRS for Non-Live-Fire Tactical Maneuver Training with Live Fire Tactical Training on Dedicated SRS Ranges.

This alternative action is the same as the proposed action described in Section 2.1, with the exception that the Army would conduct live fire training exercises on existing or new dedicated firing ranges on SRS. This alternative is not considered a viable option and was eliminated from review and consideration for the following reasons:

- The scope of the IAG between DOA-FG and DOE-SR covers tactical maneuver training and simulated weapons fire only. Other than possible future use of BDR, the conduct of Army live fire on SRS would present significant security and safety hazards and is not provided for in the IAG.

- SRS's protective force (Wackenhut Services Inc.-Savannah River Site Team [WSI-SRS]) uses the existing ranges at BDR to meet its live fire training needs. BDR has no excess capacity to accommodate Army training needs.

- Implementation of this alternative would necessitate the establishment of impact areas to accommodate the firing of dud producing munitions. The Army currently has a moratorium on establishing new duded impact areas on its own installations because it cannot ensure that such areas can be environmentally sustained. Establishing this type of land use on SRS would adversely impact the human environment and not provide for the prudent multiple use of Federal property.

2.3.2 Alternative Action: Use of Entire SRS for Non-Live-Fire Tactical Maneuver Training

This alternative action is the same as the proposed action described in Section 2.1, with the exception that the Army would conduct non-live-fire tactical maneuver training over the entire SRS. This alternative is not considered a viable option and would be eliminated from review and consideration for the following reasons:

- The administrative and industrial core of SRS possesses administrative and industrial complexes and multiple waste storage/treatment/disposal facilities. Army training in this area would significantly interfere with critical DOE missions and operations and create unsafe conditions for both Army and SRS personnel.

- Certain areas of SRS contain ecologically or culturally sensitive resources or contamination. Army training in these areas would adversely impact critical cultural/ecological resources or present human health issues relative to potential exposure to contaminants or pose a risk of damage to remedial systems/structures in place to effect environmental cleanup or prevent exposure to hazardous substances.

- SRS possesses multiple nuclear facilities and waste sites. Use of the entire SRS for military training may cause concern among the civilian community regarding the safety and integrity of these facilities.

2.3.3 Drop Zone Alternative Site Analysis

Six potential DZ sites were identified by the Army (Figure 2-9). However, four of these potential sites (i.e., North-1, North-2, Par Pond, and Road 9) were determined not to be viable due to their location in the Red-Cockaded Woodpecker (RCW) Management Area. A fifth potential site (Hog Barn) was found not to be viable due to the presence of an active seismic monitoring station. With the elimination of those five potential DZ sites, the location considered in this EA for construction and operation of a DZ is the Water Gap site (Figure 2-8).

3.0 AFFECTED ENVIRONMENT

The proposed action considered in this EA would occur within 120,320 acres (48,693 ha) of a predominately non-industrialized area of SRS outside of the site's administrative and industrial core and BDR (Figure 2-1). This section provides a description of the environmental attributes of the proposed Army training area. In describing the affected environment, emphasis would be placed on sites identified by the Army for the construction and operation of permanent training facilities (i.e., FOBs and DZ). Characterization of the affected environment is an important element of the NEPA process because it provides a baseline against which to evaluate potential environmental impacts of implementing the proposed action and 'no action' alternative considered in the EA.

3.1 Land Use

Forestland is the dominant land use within the proposed training area. This forestland consists of evergreen, deciduous, bottomland hardwood, and swamp forest types, as described by Wike et al. (2006). The majority of the proposed training activities would occur within predominately forested areas. Other land use types within the proposed training area include wetlands (i.e., swamps, marshes, bogs and similar areas), developed areas, scrub-shrub, waste sites, grassland, clear cut areas, and open water. Most of the wetlands are associated with floodplains, streams, Carolina bays, and impoundments (Figure 3-1). Developed landscapes within the proposed training area include the D-, P-, and R-Areas industrial complexes, roadways, railroad facilities, and other supporting infrastructure. These developed areas have been subjected to high levels of human activity and disturbance (Noah 1995). Grassland occurs primarily on power line rights-of-way and in a few forest openings. Throughout the proposed Army training area, there are tracts of land which have been recently logged and replanted. This transitional land-cover, which is classified as scrub-shrub, includes evergreen and deciduous shrubs and small trees 9.0 feet (2.7 meters) or less in height. Following is a discussion of land use on sites proposed for construction of FOBs and the DZ, as well as the sites proposed for urban/facility seizure training.

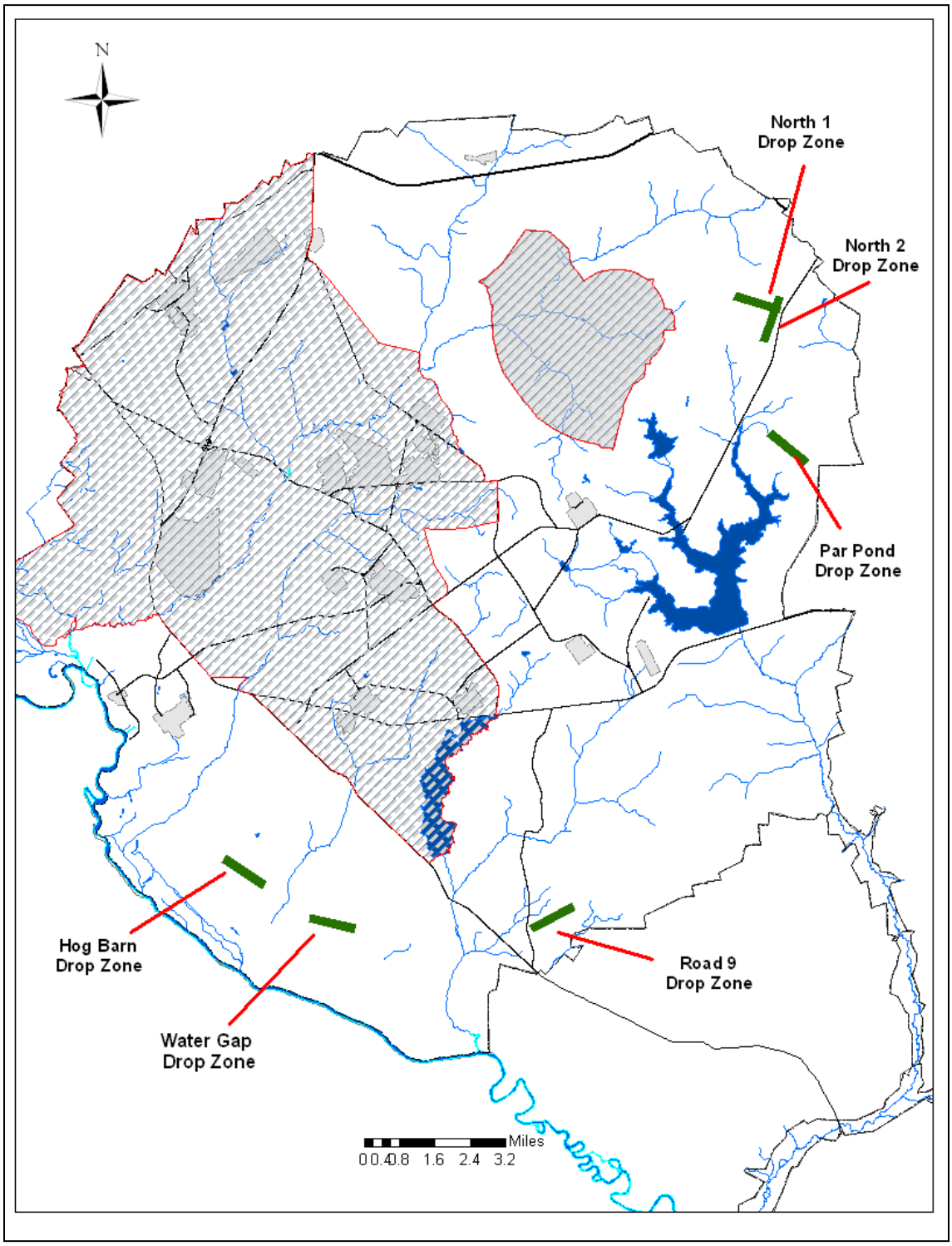

Figure 2-9. General Location Map of Potential Drop Zone Sites Identified on SRS.

3.1.1 Land Use on the Proposed Permanent FOB Sites

Two previously developed sites are being considered for the construction and operation of permanent FOB facilities. FOB-1 would be located in D-Area within the D-Area powerhouse industrial complex (Figure 2-5). FOB-2 would be located on the site of relic Gun Site 51 near L-Lake, just north of State Highway 125 (Figure 2-6). Land cover on this site consists of grass, concrete building foundations, and asphalt parking lots remaining from the previous gun site facility.

3.1.2 Land Use on the Water Gap DZ Site

The Water Gap site is proposed for construction and operation as a DZ on SRS. The 150-acre (61-ha) site is comprised of approximately 110 acres (45 ha) of loblolly and 40 acres (16 ha) of longleaf pine plantations (Figure 2-9). The loblolly plantation, planted in 1986, is densely stocked with trees varying in diameter from four to 12 inches (10-30 centimeters [cm]), and in height from 35-55 feet (11-17 m). Portions of the loblolly plantation contain a substantial laurel oak (*Q. laurifolia)* component. The longleaf plantation (planted in 2003) contains saplings 3-6 feet (1-2 m) in height, as well as a substantial broom sedge (*Andropogon virginicus*) component.

The area north of and contiguous to the northern boundary of the site is a forested wetland (Nelson 2010). Potentially limiting land uses for the Water Gap site is its use by the South Carolina Department of Natural Resources as a wildlife research area (study to be completed by fall of 2011) and the presence of previously detected, but not yet evaluated, cultural resources.

3.1.3 Land Use in the Immediate Vicinities of D-Area and the 681-1G Pumphouse

The immediate vicinities of D-Area and the 681-1G Pumphouse (Figure 2-3) comprise industrialized landscapes where the Army is proposing to conduct urban/facility seizure operations, as listed in Section 2.1. The D-Area powerhouse would be available for use by the Army after it has been decommissioned by DOE (projected 2012). A potentially limiting land use in D-Area is the presence of closed waste units and other controlled areas. Controlled areas are well documented and would be appropriately marked for avoidance during Army training events. (Figure 2-3) The pumphouse is available now, pending completion of certain environmental compliance requirements and protection of historical artifacts.

3.2 Meteorology and Climatology

Weather on SRS was described by Kilgo and Blake (2005) and Bauer et al. (1989), as follows. The SRS region possesses a humid subtropical climate characterized by extended hot summers and relatively short mild winters. Summer-like weather conditions typically last from May through September, with July and August normally being the hottest months. January and February are typically the coldest months. Precipitation in the region averages in excess of 47 inches per year. Spring and autumn seasons tend to be drier than the winter and summer seasons. Spring and summer

thunderstorms can be intense. The general meteorological and climatological data reported for SRS is representative of conditions present throughout the proposed Army training area.

3.3 Geology and Soils

SRS is situated primarily on the Aiken Plateau of the Upper Atlantic Coastal Plain physiographic region, approximately 25 miles (40 km) southeast of the Fall Line that separates the Atlantic Coastal Plan from the Piedmont physiographic province. The Aiken Plateau is highly dissected and characterized by broad, flat areas between streams and narrow, steep-sided valleys. There are several identified geologic faults on SRS, but none of these faults are considered to be capable, meaning that none of these faults, or associated faults, have moved at or near the surface within the past 35,000 years (DOE 2002). The physiography of the proposed Army training area is comprised of two major components: the Aiken Plateau and the alluvial terraces of the Savannah River floodplain. The Aiken Plateau, which dominates the proposed training area, ranges in elevation from 250 to 400 feet (76 to 122 meters) above mean sea level (msl). The alluvial terraces of the Savannah River occur below 250 feet (76 meters) msl.

Soils on SRS were described by Rogers (1990), as follows. Soils across the proposed Army training area are primarily sands and sandy loams, with sporadic clay layers overlying subsoil containing a mixture of sand, silt, and clay. These soils are gently sloping to moderately steep (0 to 10 percent grade) and present a slight erosion hazard. Soils on the uplands and on the bottomlands along major streams possess a nearly level grade. Soils in the small, narrow drainage valleys possess a steeper grade. Most of the upland soils are well drained to excessively drained. The well-drained soils have a thick, sandy surface layer that extends to a depth of 7.0 feet (2.1 meters) or more in some areas. The soils on bottomlands range from well drained to very poorly drained. Some soils on the abrupt slope breaks have dense, brittle subsoil. No prime farmland soils occur on SRS.

3.3.1 Soils and Topography on the Proposed Permanent FOB Sites

Soils on the proposed permanent FOB-1 site, which is located in D-Area adjacent to the D-Area powerhouse, are primarily Udorthents, which typically are found in developed, urbanized landscapes and consist mostly of well drained, compacted heterogeneous soil materials that are the spoil of excavations and major construction activities (Rogers 1990). There are no hydric soils present on this site. The immediate FOB-1 site is clear of structures and possesses a surface elevation of 140 feet (43 meters) above msl. Soils on the proposed permanent FOB-2 site are Orangeburg loamy sand (Rogers 1990). The area, which is the prior location of relic Gun Site 51, is level and possesses a surface elevation of 230 feet (70 meters) above msl.

3.3.2 Soils and Topography on the Proposed Water Gap DZ Site

The proposed Water Gap DZ site is located adjacent to the Savannah River floodplain. Soils on this site are predominately well drained Blanton and Lakeland sands. The

northern boundary of the site possesses hydric type soils (Fluvaquents). The site is generally flat, with topographic elevations ranging from 105 to 110 feet (32 to 34 meters) above msl (Nelson 2010; Rogers 1990).

3.4 Surface Hydrology

Surface water drainage in the region is dominated by the Savannah River, which forms the western boundary of SRS. The Savannah River receives drainage from five major tributaries which originate on or drain through SRS. These tributaries are Upper Three Runs (UTR), Fourmile Branch (FMB), Pen Branch, Steel Creek, and Lower Three Runs (LTR) (Figure 3-1). All of these streams drain proposed Army training areas. SRS also possesses two large manmade surface water impoundments, PAR Pond and L-Lake (Figure 3-1). Detailed descriptions of SRS surface water hydrology can be found in Wike et al. (2006). Groundwater resources are not considered in the EA because they would not be impacted by the proposed action.

The Savannah River is classified by the South Carolina Department of Health and Environmental Control (SCDHEC) as freshwater that is suitable for primary and secondary contact recreation, drinking after appropriate treatment, balanced native aquatic species development, and industrial and agricultural purposes. This same use classification is applicable to the five tributaries which originate on or drain through SRS.

SRS has six active SCDHEC NPDES permits for: 1) industrial wastewater, 2) industrial storm water, 3) construction storm water, 4) utility water, 5) no discharge (for land application of sludge from the CSWTF), and 6) pesticide application. With the exception of minor problems areas involving copper and fecal coliform bacteria which are not related to site operations, surface streams on SRS meet applicable SCDHEC water quality standards.

There are certain stream reaches and lakes which possess bottom sediments contaminated by past SRS operations. Some of these contaminated drainages are located within the proposed Army training area. Training would be closely monitored or prohibited in these areas.

3.4.1 Surface Hydrology on the Proposed Permanent FOB Sites

The FOB-1 site in D-Area is located adjacent to the Savannah River floodplain and runoff from this site is via a storm drainage system to an unnamed tributary of the Savannah River Swamp. The FOB-2 site is located within the Pen Branch watershed. Surface drainage from this site is west toward Pen Branch. No perennial or intermittent streams are present on either of these alternative FOB sites.

3.4.2 Surface Hydrology on the Water Gap DZ Site

The Water Gap site is located within the Savannah River Swamp drainage. Surface drainage from this site is south to the Savannah River Swamp. There are no perennial or intermittent streams present on this site.

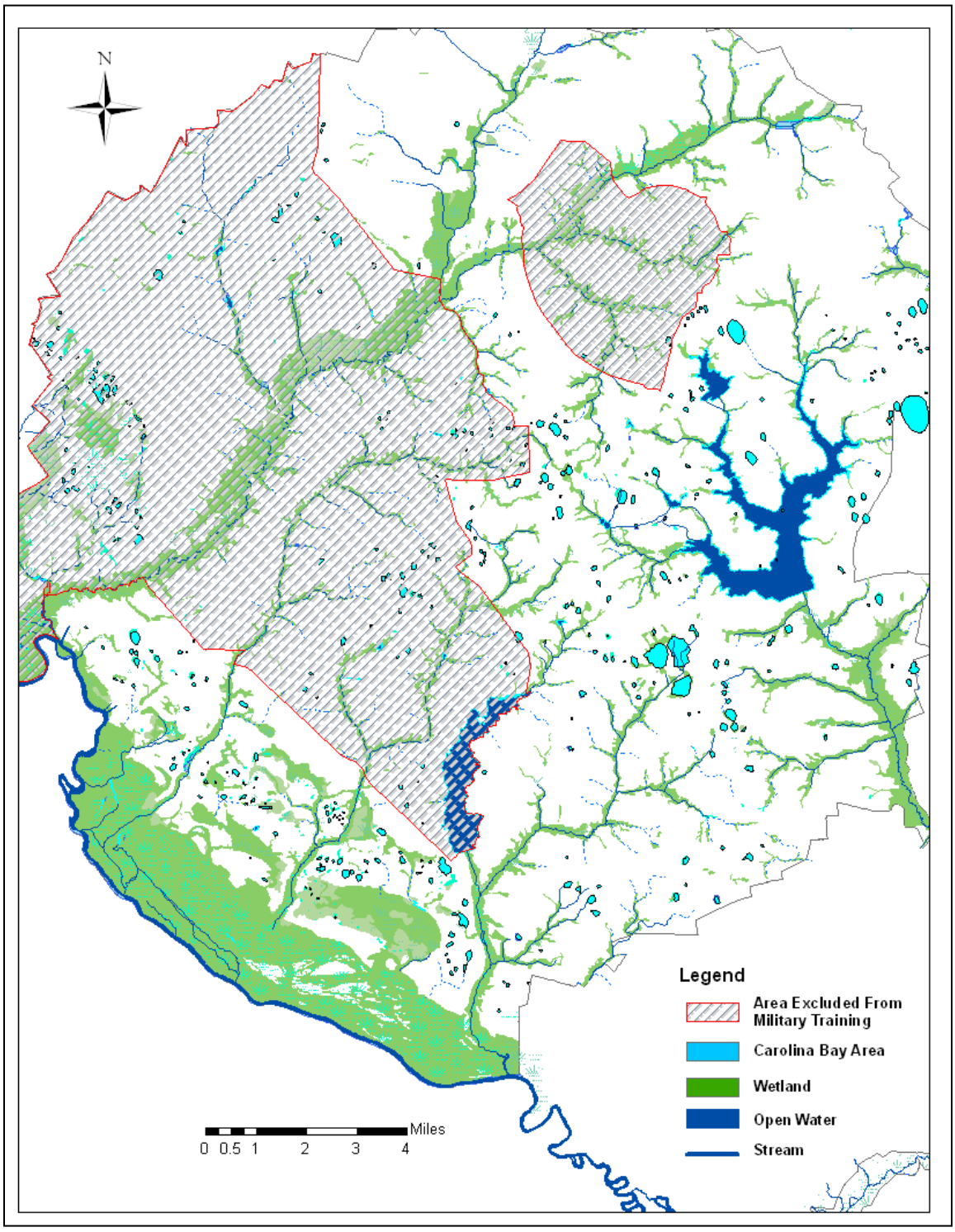

Figure 3-1. Aquatic and Wetland Resources on SRS.

3.4.3 Surface Hydrology in the Immediate Vicinities of D-Area and the 681-1G Pumphouse

The D-Area industrial complex is contiguous to the Savannah River floodplain. Surface drainage from this industrialized landscape flows via a storm drainage system to unnamed tributaries of the Savannah River Swamp. Surface drainage from the area of the 681-1G Pumphouse is into the Savannah River via the intake canal. There are no perennial or intermittent streams on either of these sites.

3.5 Air Quality

SRS is located near the center of the Augusta, Georgia (GA) – Aiken, South Carolina (SC) Interstate Air Quality Control Region (AQCR) No. 53. The U.S. Environmental Protection Agency (USEPA) currently classifies this AQCR as being in attainment with the National Ambient Air Quality Standards (NAAQS) for criteria air pollutants (40 CFR 81.311, 81.341).

SRS has two Clean Air Act Title V operating permits. The primary sources of air pollutants at SRS are biomass and oil-fired boilers in A-Area, the coal-fired boilers in D-Area, biomass-fired boilers in K-and L-Areas, diesel-powered equipment, the Defense Waste Processing Facility, soil vapor extractors, groundwater air strippers, and various other processing facilities. Other emissions and sources include fugitive particulates from coal handling, vehicles, controlled burning of forested areas, and temporary emissions from various construction-related activities (NRC 2005 and SRNS 2010). Monitoring results demonstrate that SRS-related air pollutant concentrations are in compliance with applicable Federal and State standards (SRNS 2010). Air quality conditions reported for SRS are representative of conditions within the proposed Army training area.

The USEPA anticipates issuing final 8-hour primary ozone and cumulative, seasonal secondary ozone standards by July 29, 2011. The current primary standard (0.075 parts per million [ppm]) may be reduced to the 0.060 - 0.070 ppm range. This reduction in the primary ozone standard may result in SRS being located in a nonattainment area.

3.6 Ecological Resources

The ecological resources of SRS are discussed in detail by Wike et al. (2006); documented conditions are as follows. Since 1950, when the land for SRS was acquired, natural resource management practices and natural succession outside of the developed administrative and industrial areas of the site have resulted in increased ecological complexity and diversity. As discussed in Section 3.1, SRS's terrestrial habitat is comprised primarily of forestland. However, over 20 percent of the site's surface area is covered by water, including wetlands, bottomland hardwoods, cypress-tupelo swamp forests, two large cooling water reservoirs, creeks and streams, and 299 isolated upland Carolina bays and wetland depressions (Figure 3-1). The biodiversity within SRS is extensive due to the variety of plant communities and mild climate. Scientists have documented the occurrence of 1,322 plant species from 151 taxonomic families on SRS.

Animal species known to inhabit SRS include 55 species of mammals, 255 species of birds, 60 species of reptiles, and 44 species of amphibians.

Five species which are afforded protection under the Federal Endangered Species Act (16 USC 1531 *et seq*.) are found on SRS and known to occur in the proposed Army training area. These threatened and endangered (T&E) species are the wood stork (*Mycteria americana*), RCW, shortnose sturgeon (*Acipenser brevirostrum*), smooth purple coneflower (*Echinacea laevigata*), and pondberry (*Lindera melissifolia*) (Wike et al. 2006). Additional descriptive information regarding T&E and other species on SRS can be found in the Biological Evaluation (BE) prepared for the proposed action (Appendix B).

3.6.1 Red-cockaded Woodpecker

The RCW is a territorial, non-migratory species. This species is known to be somewhat tolerant of noise and activity in its immediate vicinity, as evidenced by growing populations on numerous Army installations with intensive training activities.

There are multiple clusters of RCW cavity trees located throughout the proposed SRS Army training area. The RCW population at SRS numbered 50 active groups during the 2008 breeding season (USDA 2010). SRS has an active RCW management and monitoring program which follows the most current research and management recommendations from the U.S. Fish and Wildlife Service (USFWS) (USDA 2010). SRS possesses two natural resource management zones which are dedicated to RCW management (USDA 2010):

- Red-cockaded Woodpecker Management Area (RCWMA), which consists of 86,069 acres (34,832 ha). The protection of RCW habitat is the primary objective of this management area. Army training activities in this area would be subject to restrictions to avoid impacting the RCW and its habitat.
- Supplemental Red-cockaded Woodpecker Management Area (SRCWMA), which consists of 48,167 acres (19,493 ha). The objective of this management area is to create habitat for RCW recovery. Army training activities in this area would be subject to fewer restrictions than those implemented in the RCWMA.

All of the RCWMA and part of the SRCWMA lie within the proposed Army training area. RCW cavity trees are marked with a single yellow or white painted band or double white painted bands. Some of the RCW clusters are identified with signs depicting an RCW. The military may be held responsible for additional RCW monitoring to determine cause if the RCW population declines or fails to grow.

3.6.2 American Bald Eagle

Although the bald eagle has been de-listed from the Endangered Species Act (16 USC 1531 *et seq*.), it is still protected by the Migratory Bird Treaty Act (16 USC 703 *et seq*.) and the Bald and Golden Eagle Protection Act (16 USC 668-668d). SRS has a small breeding population of American bald eagles. It is believed that one to two pairs of

eagles breed annually at SRS. There are two established nesting sites on SRS: the Pen Branch site located west of L-Lake and the Eagle Bay site located in a cypress wetland south of Par Pond (Appendix B). Each nesting site is surrounded by a 6,560 feet (2,000 meters) wide TMZ buffer zone, with access restrictions from September 15 through June 1. AT SRS, breeding eagles typically begin nest building in late fall or early winter. Chicks typically fledge and leave the nest by late spring.

3.6.3 Aquatic Habitats

Aquatic habitat on SRS includes manmade ponds, Carolina bays, reservoirs, and tributaries of the Savannah River. The Savannah River is contiguous to SRS, forming its western boundary. There are more than 50 manmade impoundments throughout the site that support fish populations. Carolina bays, a type of wetland unique to the southeastern United States, are natural shallow depressions which can range from lakes to shallow marshes, herbaceous bogs, shrub bogs, or swamp forests. Among the 299 known or suspect Carolina bays found throughout SRS, fewer than 20 have permanent fish populations. Although fishing in SRS surface waters is prohibited, the contiguous Savannah River possesses both sport and commercial fisheries (DOE 1982). SRS wetlands, which are associated with floodplains, streams, Carolina bays, and impoundments, include vegetation such as bottomland hardwood, cypress-tupelo, emergent vegetation and swamp forest. The distributions of aquatic resources and wetlands on SRS are illustrated in Figure 3-1.

Most Army exercises could take place adjacent to, but not within, wetlands. Exercises related to refueling activities, FARP and Refueling on the Move (ROM) operations, would take place in locations remote from wetlands to ensure that these areas would not be affected by inadvertent fuel spills. Wheeled vehicles and foot traffic would be allowed to travel through wetlands on established roadways. Foot traffic may also pass through wetlands via firebreaks and along areas of high ground. The only exception would be wetlands contiguous to stream crossing points. The locations of proposed stream crossings would be pre-approved by DOE prior to the training event to ensure that no critical aquatic or wetland resources are impacted. As discussed in Section 2.1, stream crossings would be by dismounted troops only.

Many wetlands associated with major stream corridors on SRS are located within DOE Research Set-Asides which are managed by the University of Georgia's Savannah River Ecology Laboratory (SREL) (Figure 3-2). There are 30 research set-asides, 19 of which are located within the proposed Army training area. Two of these 19 set-asides, Rainbow Bay and Field 3-412/Ellenton Bay, are regularly visited by SRS researchers (Figure 3-2). Research set-asides represent specific habitats and research sites which are protected from most SRS site maintenance and forest management operations. The purpose for the research set-asides is for SRS to possess relatively undisturbed areas which can provide baseline environmental data for determining the effects of SRS operations (Davis and Janecek 1997). Utility right-of-ways, roads and fire breaks traverse these set-asides and USFS-SR vehicles regularly move through them on secondary dirt or gravel roads. Army training activities within these set-asides would be limited to light foot and vehicular traffic on existing roads and insertion of personnel by parachute if sufficient open land or

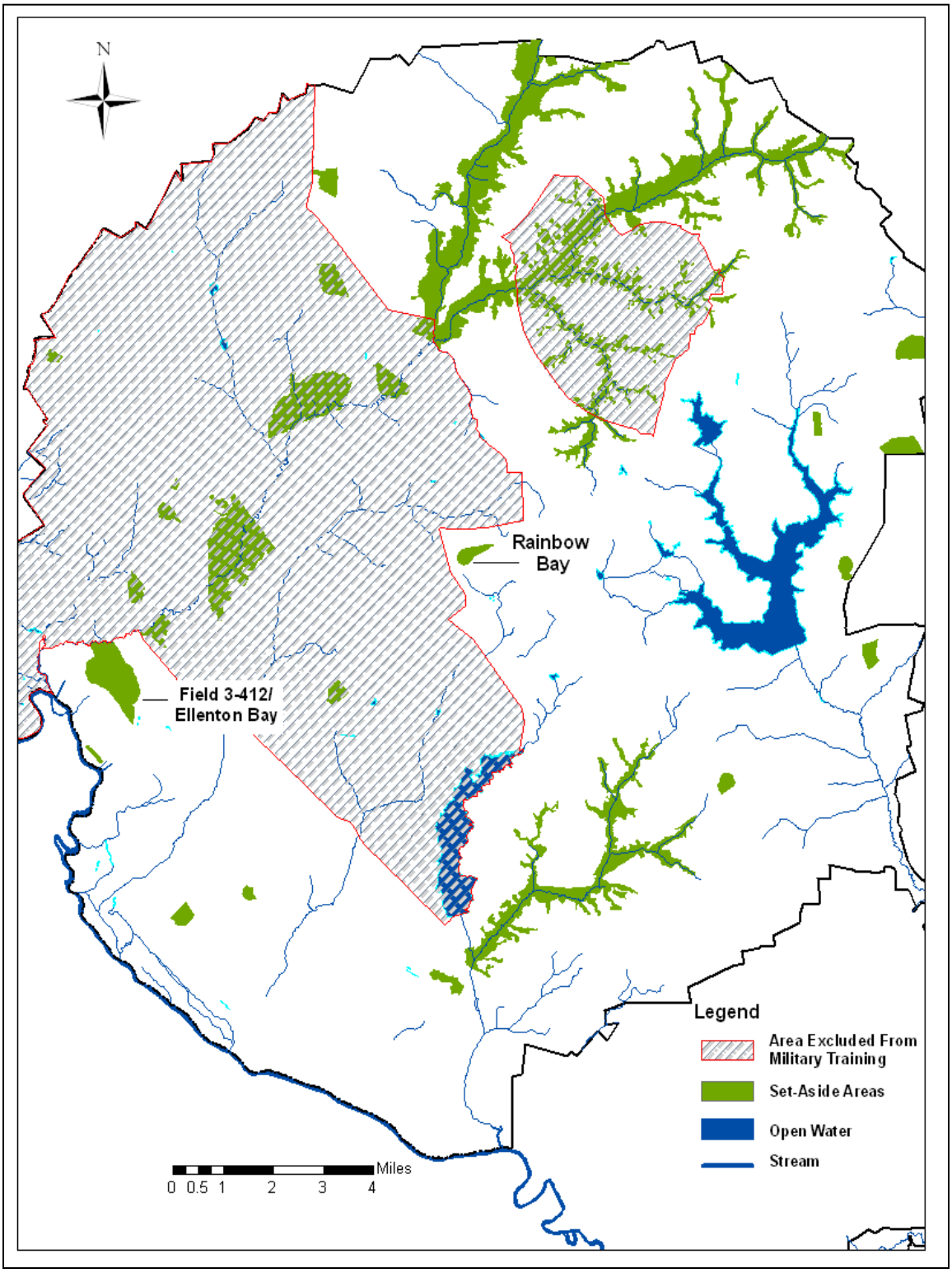

Figure 3-2. DOE Research Set-Asides on SRS.

road area is available. The Army and DOE would closely monitor training activities within the research set-asides to ensure that these valuable ecological resources are not adversely impacted.

3.6.4 Ecological Resources on the Alternative FOB Sites

The FOB-1 and FOB-2 sites are located in previously developed locations (D-Area and the relic Gun Site 51 site, respectively). There are no known T&E species or other environmentally sensitive resources such as streams, wetlands, and Carolina bays located within these sites (Appendix B).

3.6.5 Ecological Resources on the Water Gap DZ Site

The Water Gap DZ site is located within forestland within the Savannah River Swamp Management Area. There are no known T&E species or other sensitive ecological resources located within this site (Appendix B).

3.6.6 Ecological Resources in the Immediate Vicinities of D-Area and the 681-1G Pumphouse

The D-Area encompasses a developed industrialized landscape which possesses no known T&E species or other environmentally sensitive resources (Appendix B). The 681-1G Pumphouse is located along the Savannah River at the head of an intake canal. Wood storks may occasionally forage in area waters and shortnose sturgeon may be present within the Savannah River during spawning season (February through April) (Appendix B).

3.7 Archaeological, Cultural, and Historic Resources

Through a cooperative agreement, DOE and the South Carolina Institute of Archaeology and Anthropology (University of South Carolina) conduct the Savannah River Archaeological Research Program (SRARP) to provide services required by Federal law (including the National Historic Preservation Act [16 USC 470 *et seq*.]) for the protection and management of archaeological, cultural, and historical resources. To facilitate the management of these resources, SRS is divided into three zones based on an area's potential for containing sites of archaeological, cultural, or historical significance (SRARP 1989). Zones 1, 2, and 3 represent areas possessing high, moderate, and low potential (respectively) for significant archaeological or historical resources. High priority sites are typically located on elevated areas or bluffs adjacent to stream corridors and other wetlands.

Systematic surveys for archeological (historic and prehistoric) resources have been conducted on 32.7 percent of the SRS area available for survey, resulting in the identification of 1,878 sites recorded to date (SRARP 2009). Although most of these sites have not been formally evaluated for eligibility for listing in the National Register of Historic Places (NRHP), 67 sites have been identified as potentially eligible.

Most of the proposed Army training area possesses a low to moderate potential for significant archaeological and historical resources (Zones 2 and 3, respectively). As part of the site-specific screening process conducted prior to the advent of training activities, proposed training areas would be evaluated by the SRARP to determine the presence of any archaeological, cultural, or historical resources of potential interest or significance. If found to be present, appropriate mitigative actions would be implemented to protect or record these resources prior to commencement of training activities.

3.7.1 Archaeological, Cultural, and Historic Resources Within the Proposed Permanent FOB Sites

The FOB-1 and FOB-2 sites are located in previously developed areas (D-Area and relic Gun Site 51 site, respectively). Both of these sites possess a low potential for cultural resources because it is likely that any resources originally present were destroyed during construction-related activities.

3.7.2 Archaeological, Cultural and Historic Resources Within the Water Gap DZ Site

There are two known archaeological sites located within the preferred Water Gap DZ site, 38BR381 and 38BR382 (Moon 2010). Both are prehistoric and have lithic (stone) and pottery artifacts associated with them. Site 38BR381 has more potential for significance because it could possess intact subsurface deposits. Site 38BR382 contains a small scatter of artifacts adjacent to a road and may have been impacted by road construction. Beyond these two known sites, most of the site lies in Zone 2 and possesses a moderate potential for archaeological remains. However, along its southern border, the Water Gap site lies in Zone 1, which indicates an increased probability for significant archaeological deposits. A review of 1951 aerial photography indicates that historic farming activity on the Water Gap site was limited, thus increasing the likelihood for intact archaeological deposits. A comprehensive survey of the site (and possible mitigation of archaeological resources) would be required before construction of a DZ.

3.7.3 Archaeological, Cultural and Historic Resources Within D-Area and the Vicinity of the 681-1G Pumphouse

The developed industrial landscapes of the 681-1G Pumphouse and D-Area possess a low potential for significant archaeological resources because it is likely that any resources originally present were destroyed during construction-related activities. However, the 681-1G pumphouse is eligible for the NRHP as part of the Cold War District and many of the industrial facilities located within D-Area are also eligible for nomination as part of the SRS Historic District (King 2010). To date, none of these facilities have been nominated for inclusion in the NRHP.

3.8 SRS Noise Environment

Industrial operations in developed areas (e.g., vehicular traffic, industrial processes, cooling systems, transformers, engines, pumps, boilers, steam vents, paging systems),

general site activities in undeveloped areas (e.g., logging operations, vehicular and rail traffic), security-related activities (e.g., helicopter overflights, BDR live-fire range operations), and civilian road and rail traffic are the primary contributors to SRS's noise environment. Occasional overflights of commercial, civilian and military aircraft also contribute to the noise environment of SRS and surrounding areas. Silvicultural activities (e.g., logging operations) are common throughout the SRS region, both on and offsite. Most of the land area surrounding SRS is rural or undeveloped. It is expected that at the site boundary SRS-generated noises are either unheard or barely discernible above the background noise level of the general area.

3.9 Site Infrastructure

SRS possesses a well-developed site infrastructure. The site's road system includes more than 199 miles (320 km) of primary and more than 995 miles (1,602 km) of secondary roads (DOE 2002). Maximum vehicular weight loading for the site's gravel roads is approximately 80,000 pounds (36,199 kilograms [kg]). The source of potable water at SRS is groundwater which is treated at facilities in A- and B-Areas and distributed to other areas of the site via a 27-mile (43-km) pipeline system. Annual water consumption (primarily process water of groundwater origin) is approximately 470,000 million gallons (1.78 billion liters [l]), while the potable water production capacity at SRS is approximately 1.0 billion gallons (3.79 billion l) (DOE 1999).

Implementation of the proposed action would necessitate the Army's use of SRS roads, potable water, and sanitary wastewater treatment systems, as well as selected industrial facilities pending their decommissioning. SRS's road, water supply and wastewater treatment systems are designed to support a site population of approximately 20,000 persons. The current SRS workforce numbers less than 12,000 persons. SRS's infrastructure possesses significant excess capacity which would be available to meet the requirements of the proposed action.

3.10 Demographics and Socioeconomics

SRS is located approximately 15 miles (24 km) southeast of Augusta, Georgia and approximately 12 miles (19 km) south of Aiken, South Carolina. SRS's Region of Interest (ROI) is the four-county area of Columbia (GA), Richmond (GA), Aiken (SC), and Barnwell (SC); 90 percent of SRS employees reside in these four counties (DOE 2011). From 2000 to 2008, the ROI labor force increased by 9.7 percent, while the overall population increased by 7.0 percent (DOE 2011). The July 2009 unemployment rate in the ROI was 10 percent, which was lower than the 11 percent unemployment rate across the two-State area of South Carolina and Georgia (DOE 2011). In March 2011, SRS employed approximately 12,000 people, and had an annual budget of approximately $1.2 billion**.**

3.11 Environmental Justice

The 10-mile (16-km) radius surrounding the approximate midpoint of SRS encompasses parts of four counties, Richmond (GA), Burke (GA), Barnwell (SC), and Aiken (SC).

From 1990 to 2000, the total population of these counties increased by approximately 10 percent to 388,048; the minority population increased by approximately 28 percent to 175,866; and the low-income population increased by approximately 14 percent to 67,950 individuals.

Demographic data from the 2000 census show that the African-American population residing in the four-county area accounted for approximately 89 percent of the total minority population, while those of Latino or Hispanic origin comprised approximately five percent of the total minority population (DOE 2011). A detailed discussion of the racial and income characteristics of the SRS ROI can be found in DOE/EIS-0423 (DOE 2011).

3.12 Air Space

The air space over SRS is not restricted and is occasionally utilized by private, commercial and military aircraft. Training and security activities by WSI-SRS helicopters comprise the most frequent use of air space over SRS. The nearest commercial airport is Bush Field south of Augusta, GA, approximately 11 miles (17 km) northwest of the westernmost SRS boundary. The neighboring cities of Aiken and Barnwell have small airports which service private and small business aircraft.

4.0 ENVIRONMENTAL CONSEQUENCES OF THE PROPOSED ACTION AND ALTERNATIVES

The proposed action considered in this EA involves non-live-fire tactical training activities to be conducted by the Army at SRS. Annually, the Army would submit a plan of proposed training events to DOE for review and approval. Prior to scheduling a training event, the Army would identify a location within SRS which meets training scenario requirements. This proposed training location would subsequently be screened by DOE and the Army for the presence of ecological and cultural resources and/or controlled areas which should be avoided. The proposed location would also be reviewed by DOE for any potential land use conflicts regarding existing or future SRS missions. As part of this screening process, existing conditions within the specific proposed training area would be documented or benchmarked by DOE to create an environmental baseline. DOE would use the environmental baseline to assess the effect(s) of training events on the human environment and assist in determining the efficacy of any applied best management practices (BMPs).

Before conducting a training event, the Army would prepare, and DOE would approve, a site-specific training plan designed to protect the human environment by avoiding selected ecological resources and implementing appropriate BMPs, and by resolving any identified site-related issues such as conflicts with land use and operations. During a training event, activities would be monitored by DOE and the Army to ensure implementation of the training plan. After completion of the training event, DOE and the Army would inspect the location to (a) ensure that all training debris has been removed, (b) identify and assess any resulting environmental or infrastructure damage and (c) determine the efficacy of applied BMPs. The Army would be responsible for mitigating

any resultant damage to SRS resources. DOE expects that the number and duration of training events each year would vary. While this variability would, in part, be a function of DOD demand to train on SRS, the most significant limiting factor would be SRS's ability to accommodate multiple military training events without enduring long-term environmental damage or disruption of site missions. Utilization of the above described site screening and field inspection processes would facilitate DOE's ability to monitor Army training activities and ensure that SRS's human environment does not sustain significant adverse impacts.

4.1 Training Activities

Potential environmental effects are assigned an impact level according to the following convention:

- Significant – the impact would possess the context and intensity as defined in Council on Environmental Quality regulations (40 CFR 1508.27).
- Moderate – the impact would be readily apparent, but not significant.
- Minor – the impact would be perceptible, but not readily apparent.
- Negligible – the impact would be less than minor and may not be perceptible.

Based on DOE's evaluation of the training scenarios, and on the planning and monitoring process described in the JSOP, the expected environmental impacts of the training activities associated with the proposed action are described below.

4.1.1 Air Quality

The primary source of air emissions for the proposed training activities would be engine exhaust from vehicles, aircraft, portable generators, and portable pumps. Emissions would include VOCs, carbon monoxide (CO), nitrogen oxides ($NO_{x)}$, sulfur dioxide ($SO_{2)}$, and PM. Other sources of air emissions would be training activities which generate fugitive dust such as helicopter rotor wash and vehicular traffic, obscurants, the combustion of primer and propellant during blank weapons fire, and the use of pyrotechnics. Emissions from these activities also would include VOCs and PM.

The generation of air emissions from internal combustion engines during most training events would be site-specific, short-lived and quickly dispersed into the atmosphere. Air emissions associated with aircraft and convoy-related operations would typically be generated over a larger geographic area. The resulting pollutant loadings would therefore be diffuse and quickly assimilated into the atmosphere. The release of VOCs and PM from blank weapons fire and pyrotechnics during training activities would be negligible due to the minimal amount of primer and propellant combusted. The generation of fugitive dust by vehicular and helicopter traffic would be site-specific, short-lived, and minimized by the application of BMPs where appropriate.

None of the air emissions generated by implementation of the proposed action would require permitting by SCDHEC. All generators would be "temporary or portable" internal combustion engines that meet the definition of "non-road engine" under 40 CFR

89 and therefore also would be exempt from Clean Air Act permitting. DOE anticipates that the impact of air emissions from the proposed action on air quality would be negligible and would not contravene criteria air pollutant standards.

4.1.2 Wetlands and Streams

Foot travel crossings of wetlands and streams are proposed in four training activities for approximately 30-550 troops per exercise, with the number depending on the training activity and the size of the training scenario. Crossing locations must have prior approval from DOE. No hardened stream crossings would be constructed at SRS, but the Army is allowed to utilize existing bridged and culverted road crossings. During these stream crossings, a temporary increase in stream turbidity, limited disturbance of bottom sediments, and trampling of wetland vegetation would occur. Macrofauna within these habitats would be temporarily displaced or disturbed but not otherwise impacted. Additionally, the potential exists for disturbance of river bottom sediments and wetlands at locations where troops come ashore after water insertion during Air-Water Operations (Section 2.1.1.20).

With certain qualifications, the Army would be allowed to train adjacent to, but not within, wetlands (see discussion in Sections 2.1 and 3.6). Training events which involve the storage or dispensing of petroleum, oils, and lubricants (POLs) (e.g., FARP and ROM-related activities) would not be conducted within 200 feet (61 meters) of any surface water body or ground water well. This latter buffer requirement, as well as the implementation of BMPs and procedures to prevent and rapidly respond to spills (e.g., catch basins for fuel bladders), would serve to protect area surface and groundwater resources. The Army would minimize leakage of petroleum products into the environment by implementing a SPCC Plan, including the regular inspection of vehicles and aircraft, conducting routine maintenance of equipment, and the use of drip pans when vehicles are at rest.

Neither discharges of dredged or fill material into wetlands and streams, nor construction of hardened crossings, is a component of the proposed action. DOE anticipates that the impact of proposed Army training activities on water quality in SRS streams and wetlands would be negligible to minor in magnitude. Likewise, DOE anticipates that the impact of proposed Army training activities on SRS stream and wetland habitats would be negligible to minor in magnitude.

4.1.3 Water Quality

Wastewater streams generated by proposed training activities are comprised of sanitary wastewater from portable toilets, grey water from field kitchens, and rinse water from decontamination exercises. Sanitary wastewater would be collected by an authorized contractor and transported to the SRS Central Sanitary Wastewater Treatment Facility (CSWTF) for treatment and disposition. Discharge of treated effluent from this facility is into FMB and the addition of the Army's waste stream to the CSWTF would not adversely impact plant capacity, operations, or permit compliance. Grey water generated by field kitchens and decontamination operations would be collected and, following

removal of any gross solids such as food scraps, be broadcast onto the ground surface or channeled into a shallow sump for infiltration into the soil column. Grey water would not be discharged into surface streams or wetlands and application sites would be rotated to prevent the saturation of the soil column.

The personnel decontamination process for both the CST and CERFP would involve only clean water. Clean rinse water generated during decontamination exercises would be broadcast onto the ground surface. No radiological, biological, or chemical test sources would be utilized to alarm detection equipment during the conduct of this training activity, unless approved and monitored by DOE-SR and SRNL. The personnel decontamination process for both the CST and CERFP would involve clean water. The decontamination process would not differ between simulated chemical, biological, or radiological agents. Simulated agents would not contact the decontamination water.

If DOE-SR and SRNL were to approve a chemical, biological, or radiological source for training use, the same decontamination process would be used as for the simulated agents. Water quality would not be affected because the sources would not come in contact with the decontamination water. However, the Army would rely on DOE-SR and SRNL to monitor the used decontamination water for potential presence of the source, and to properly dispose of used decontamination water containing a source.

Water-based training activities are likely to cause increases in turbidity due to wave action created by watercraft operation, and by the beaching of watercraft and troops exiting watercraft. Foot travel though streams and wetlands may cause temporary increases in turbidity at, and downstream of, the crossing location. The Army would implement erosion control BMPs during DZ construction to minimize sediment-laden runoff and subsequent impacts to water quality. Construction activities would require compliance with applicable construction stormwater regulations. The potential for rutting or soil erosion on road shoulders and unimproved roads that could cause sediment-laden runoff to reach streams would be mitigated by the Army through the implementation of BMPs to maintain soil integrity and prevent sediment runoff.

Training events which involve the storage or dispensing of POLs (e.g., FARP- and ROM-related activities) would not be conducted within 200 feet (61 meters) of any surface water body or groundwater well. This buffer requirement, as well as the implementation of BMPs and procedures to prevent and rapidly respond to spills (e.g., catch basins for fuel bladders), would serve to protect area surface and groundwater resources. The Army would minimize the leakage of petroleum products into the environment by implementing a SPCC Plan, including the regular inspection of vehicles and aircraft, conducting routine maintenance of equipment, and the use of drip pans when vehicles are at rest.

Direct discharges to surface or subsurface waters of the State are not a component of the proposed action. DOE anticipates that the impact of proposed Army training activities on SRS water quality would be negligible.

4.1.4 Terrestrial Productivity

The impact of the proposed action on terrestrial productivity would range from negligible to moderate, excluding construction and operation of the Water Gap DZ.

Construction of the proposed Water Gap DZ would require the clearing of approximately 185 acres (75 ha) of forestland and subsequent conversion of the site to grassland. The initial impact of forest clearing on the DZ site's terrestrial productivity would be moderate. Subsequent conversion of the site to grassland, however, would return it to natural production and partially mitigate this loss. DOE anticipates that the overall impact on terrestrial productivity at SRS would be minor due to the size of the DZ relative to the size of SRS. As previously discussed in Section 4.0, appropriate BMPs (e.g., erosion control) would be implemented as required to protect and sustain SRS's human environment.

Although the proposed FOBs would involve the construction and operation of permanent facilities, these bases would be established on previously developed sites with marginal terrestrial productivity. While construction of a FOB on this site would permanently remove it from natural production, DOE anticipates that the net impact on terrestrial productivity would be negligible due to previous activities.

The remaining training activities would require no permanent facilities or result in land use/cover changes, and would only minimally impact the terrestrial ecosystem. Minimal impacts would include trampling of surface vegetation by foot/vehicular traffic and limited compaction of soil in moderate to high traffic areas. Effects on vegetation and soil would be localized and temporary, with an anticipated natural recovery from potential adverse impacts following cessation of the training activity. DOE anticipates that the proposed action would have a negligible effect on terrestrial productivity.

4.1.5 Wildlife

Proposed Army training activities would increase the amount of human activity in the designated training area, including foot/vehicular/aircraft traffic, firing of small arms blank ammunition, and pyrotechnics simulating artillery fire and similar explosive-type sounds. The periodic increases in activity and noise associated with implementation of the proposed action would be expected to disturb area wildlife. These disturbances would be short-lived and limited to specific geographic areas or locations (excluding aircraft flight paths and convoy routes). DOE anticipates that the majority of affected wildlife would adapt by acclimating (negligible impact) or physically vacating the area and returning after cessation of the training event (minor impact). The Army would coordinate with DOE and the USFS to avoid wildlife disturbance that might jeopardize wildlife research projects.

The proposed Army training activities would result in the increased use of aircraft (primarily helicopters) on portions of SRS. DOE anticipates that avian mortality resulting from bird-aircraft strikes associated with the proposed increase in aircraft use would be negligible.

4.1.6 Archeological, Historical, and Cultural Resources

The Water Gap DZ (Section 2.1.1.21) is proposed for construction in an area possessing moderate to significant potential for archaeological resources. The DZ site is known to possess two potentially significant archaeological sites (see Section 3.7.3). A comprehensive survey of the site, and possible mitigation of archaeological resources, would be required prior to development of the site as a DZ. The impact of establishing the Water Gap DZ on SRS archaeological, cultural and historical resources would be minor because appropriate regulatory compliance activities would be completed prior to commencement of construction activities.

Previous industrial development activities during the 1950s-1960s at both FOB sites (Section 2.1.1.10) resulted in substantial soil disturbance, which would have destroyed any archeological or historical resources present at that time. Construction of the FOB sites would occur in these areas of previous disturbance, thereby avoiding impacts to archeological/historical resources.

DOE anticipates that impacts would be negligible to archeological/historical/cultural resources for the remaining 24 proposed training activities because they do not contain a land-disturbing component. DOE also anticipates that other training activities not specified in this EA but without a land disturbance component also would be considered to have negligible impacts on these resources.

4.1.7 SRS Infrastructure

A major premise of the proposed action is that Army units training on SRS would be self-sufficient. Specifically, these units would bring with them the resources necessary to sustain their operations and successfully complete assigned training missions. Implementation of the proposed action, however, would necessitate the Army's use of SRS infrastructure, including site roads, the potable water system, the waste water treatment system, and selected decommissioned industrial facilities. The existing SRS infrastructure possesses the capacity to support a site workforce of approximately 20,000 people. However, the 2011 workforce is approximately 12,000, so many components of the site's infrastructure (e.g., roads, potable water, waste water treatment) are underutilized and could easily accommodate the additional loading associated with the proposed action. DOE anticipates that the impacts of the proposed action on SRS's infrastructure would range from negligible to minor.

The Army would require potable water for human consumption and selected training activities (e.g., CBRN exercises). The Army would fill these water needs by utilizing SRS's potable water system. The quantity of water required would be insignificant compared to existing SRS usage and would not adversely impact site production capacity. The impacts of constructing and operating this water system were evaluated in DOE/EA-0943 (DOE 1994).

Portable toilets would be used by the Army to collect sanitary wastes. Sanitary waste water would be collected by an authorized contractor and transported to the CSWTF for

treatment and disposition. Discharge of treated effluent from this facility is into FMB and the addition of the Army's waste stream to the CSWTF would not adversely impact plant capacity, operations or permit compliance. DOE anticipates that the impacts of using the CSWTF to treat sanitary waste waters generated by the proposed action would be negligible. The impacts of constructing and operating the CSWTF were evaluated in DOE/EA-0878 (DOE 1993).

Debris and other residue generated during training activities would be collected by the Army and disposed of in an approved waste disposal facility (e.g., Three Rivers Solid Waste Authority Regional Waste Management Center). With the exception of the CSWTF, onsite waste treatment/storage/disposal (TSD) facilities would not be utilized or otherwise impacted by the proposed action. The environmental impacts of operating offsite TSD facilities are not considered in this EA.

Vehicular traffic associated with the proposed action would be infrequent and light (excluding periodic convoy traffic) and the associated potential for congestion and accidents would be minor. The use of site roads by military vehicles would be planned and monitored by DOE and the Army to ensure that vehicular weight restrictions (maximum 80,000 pounds [36,199 kg]) are not exceeded and that training activities would not interfere with DOE or other SRS missions. The integrity of unpaved roads used by the Army would be maintained by the use of appropriate BMPs. Any damage to site roads attributable to military use, such as rutting or erosion of gravel roads, pavement cracking, and road failure, would be repaired by the Army.

Electrical power required for the proposed action would be provided by the Army with portable generators. DOE anticipates that the proposed action would have no impact on SRS electrical resources.

As part of the proposed action, the Army would train on selected SRS facilities (D-Area industrial complex and 681-1G pumphouse) after they have been deactivated and decommissioned by DOE. Since DOE would no longer require or maintain these facilities, DOE anticipates that their use by the Army for military training purposes would not impact SRS infrastructure or operations.

As discussed in Section 4.0, the Army would coordinate the scheduling and siting of training events with DOE using a comprehensive up-front planning process. This planning process would be initiated 90 days prior to the date of the proposed training event. Consequently, DOE anticipates that the potential for the proposed action to interfere with normal SRS operations (e.g., road usage, silvicultural operations, ecological research projects, and site security) would be negligible.

4.1.8 Air Space

A portion of SRS airspace, as well as airspace of the surrounding area, would be used by aircraft in 19 of the 26 proposed training activities. The Army would conduct air combat and logistical support operations using fixed-wing, rotary-wing and tilt-rotor aircraft. Aircraft would be limited to air space over the proposed Army training area and be

prohibited from flying over SRS's administrative and industrial core, BDR, Southern Company's Plant Vogtle across the Savannah River from SRS, (Figure 2-2) and potentially other facilities. As required, the Army would communicate with DOE, Federal Aviation Administration and civilian air traffic controls to coordinate the use of site and regional air space and avoid interfering with WSI-SRS, commercial, and civilian air traffic. DOE anticipates that the impacts of the proposed action on regional air space would be temporary and range from negligible to moderate, depending on the number of flights and the number of aircraft used in the training exercise.

4.1.9 Noise

Aircraft, wheeled vehicles, watercraft, generators, pumps, troops, blank ammunition, and pyrotechnics would produce increased noise levels during the training exercises. Most of the land area surrounding SRS is rural or undeveloped. It is expected that the noise resulting from the proposed action (exclusive of aircraft-generated noise) would be barely discernable to human receptors in areas beyond the site boundary.

The noise of aircraft approaching and leaving SRS air space during this training activity would be most evident to offsite human and wildlife receptors located in the vicinity of the proposed flight paths. The proposed flight corridors for fixed- and rotary-wing aircraft entering and leaving SRS air space are shown in Figure 2-2. Based on noise modeling conducted by the Army, DOE anticipates that the resultant noise levels would be compatible with the surrounding noise environment and would not generate an incompatible noise zone (see Appendix C).

Although there would be potential for individual events to cause annoyance and generate complaints (moderate impact), DOE anticipates that the overall impact on the public of aircraft-generated noise associated with the proposed action would range from minor to moderate. DOE anticipates that noise-related impacts of the proposed action on SRS's workforce, most of which is located within the site's administrative/industrial core but outside of the proposed Army training area, would be temporary and range from negligible to minor.

4.1.10 Human Receptors

For most training activities, noise is the only factor potentially affecting human receptors. Any training noise that may be evident to SRS field personnel and individuals living or working near the SRS boundary is anticipated by DOE to be a minor, short-term, temporary, effect. However, noise generated by airborne operations training has the potential for individual events to cause annoyance and generate complaints (moderate impact).

The Army would utilize high energy microwave transmissions during tactical communications operations training. There are potential health risks associated with the use of high-powered radio frequencies. Training activities would avoid controlled areas, waste units, and areas of radiation-contaminated sediments.

The Army would implement appropriate BMPs to ensure the protection of human health. DOE anticipates that the proposed training activities are anticipated to have negligible effects on human receptors.

4.1.11 Socioeconomics

The Army's training mission at SRS would be managed by a small team (less than ten individuals) that would be based at Fort Gordon, Georgia. Team members would commute to SRS as required to support Army training activities. Army personnel would be utilized to establish or construct proposed temporary and permanent training facilities. Implementation of the proposed action would require no new employees. Although Army units training at SRS are expected to be self-sufficient, it is anticipated that they would contract with DOE for selected services such as potable water and the collection and disposal of sanitary waste water. The potential also exists that Army units could purchase supplies and services (e.g., lodging, food, fuel, construction materials) in communities surrounding SRS. The local economic impact is estimated at $600,000, based on four battalion-sized training groups per year. In comparison, SRS has an annual budget of approximately $1.2 billion and an approximate 12,000-member workforce. DOE anticipates that the socioeconomic impact of the proposed action on SRS's ROI would be negligible.

4.1.12 Federally Listed Threatened and Endangered Species and American Bald Eagle

The RCW, wood stork, shortnose sturgeon, pondberry, and smooth purple coneflower are the five Federally-listed species known to occur on SRS. Based on information provided by the Army in the Biological Evaluation (Appendix B), the USFWS concurs that the proposed action is not likely to adversely affect the species listed above (Appendix D). The American bald eagle, a former T&E species, is protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

4.1.12.1 Red-cockaded Woodpecker

No RCW clusters would be directly impacted by the proposed construction of permanent or temporary training facilities. The potential exists that tactical field exercises conducted in the general vicinity of these clusters could indirectly adversely impact individuals or their habitat. These adverse impacts would be avoided by the implementation of standard Army guidelines (as applicable) for training in RCW management areas (Robert et al. 1997):

- Military training activities would be prohibited within 200 feet (61 meters) of any RCW cavity tree.
- Dismounted troops could pass through a RCW cavity tree buffer zone but would not be allowed to maintain a presence within the buffer zone.
- Military vehicles would be prohibited from occupying a position or traversing within 200 feet (61 meters) of a marked cavity tree, unless on an existing road.

- No blank weapons fire or use of pyrotechnics would be allowed within 200 feet (61 meters) of RCW clusters.
- Troops would be provided RCW cluster locations and briefed on RCW training restrictions prior to their introduction into the field.

These guidelines have proven effective on numerous Army installations that support growing RCW populations. Assuming implementation of these protective measures, there are no aspects of the proposed action which would result in degradation or loss of this species' habitat or in the mortality of individuals, or otherwise comprise a violation of the Federal Endangered Species Act. The USFWS has determined that the proposed action is not likely to adversely affect RCWs (Appendix D).

4.1.12.2 Wood Stork

Wood storks forage in wetlands and shallow waters on SRS such as L-Lake, Savannah River Swamp, and Carolina bays, primarily from late June through September. There are no known wood stork nesting areas on SRS. Wood storks are highly mobile and if disturbed by training activities, would likely vacate the area and return after cessation of operations. There are no aspects of the proposed action which would result in degradation or loss of this species' habitat or in the mortality of individuals. The USFWS has determined that the proposed action is not likely to adversely affect wood storks (Appendix D).

4.1.12.3 Shortnose Sturgeon

The shortnose sturgeon is a rare anadromous fish known to spawn in the Savannah River in the vicinity of SRS. This spawning area is located upstream of the river segment which would be used for air-water training activities. These training events would not be conducted during the February through April spawning season. Any disturbance of the aquatic habitat resulting from the proposed action would be surficial and short-term and not adversely impact this species. There are no aspects of the proposed action which would result in the degradation or loss of this species' habitat or in the mortality of individuals. The USFWS has determined that the proposed action is not likely to adversely affect shortnose sturgeon (Appendix D).

4.1.12.4 Pondberry and Smooth Purple Coneflower

Pondberry is a deciduous shrub that can inhabit a variety of open to semi-wooded, seasonally flooded wetland habitats (DeLay et al., 1993; Kilgo and Blake 2005). On SRS, pondberry is known to occur at a single location on the margin of a wooded Carolina bay located within the southern portion of the proposed Army training area.

Smooth purple coneflower is a short-lived rhizomatous perennial that occurs in open dry oak woodlands, prairies, and along rights-of-way associated with these habitats (Kilgo and Blake 2005). There are three populations of smooth purple coneflower on SRS, two of which are located within the proposed Army training area (along Road 9 and Tennessee Road, respectively).

The Army would develop and implement site-specific training plans designed to protect these plant species during training events. These plans would identify and mark the location of these sensitive populations and establish protective buffers around them. Specifically, the Army would be prohibited from training with 200 feet (61 meters) of the Carolina bay which is the habitat for the pondberry or within 164 feet (50 meters) of the purple coneflower populations located in the vicinity of Road 9 and Tennessee Road. To reinforce these training restrictions, troops would receive instruction prior to their introduction into the field regarding the appearance and location of these sensitive plant species and the need to respect the protective buffers. With implementation of these protective measures, there would be no aspects of the proposed action which would result in the degradation or loss of these species' habitats or in the mortality of individuals. The USFWS has determined that the proposed action is not likely to adversely affect pondberry and smooth purple coneflower (Appendix D).

4.1.12.5 American Bald Eagle

The Eagle Bay site is located within the proposed Army training area. The Army would conduct no training activities within this latter TMZ. However, traffic (foot and vehicular) would be allowed along Road B and dismounted troops would be allowed to transit the TMZ when moving from one training area to another. Military aircraft would generally avoid using the airspace over the TMZ but, if required, would maintain a minimum altitude of 1,000 feet (305 meters). The proposed action would not adversely affect the viability of this species on SRS (Appendix B); this would be considered a negligible impact.

4.1.13 Environmental Justice

Noise generated by aircraft entering and leaving SRS airspace would be evident to minority and/or low-income populations residing in the vicinity of proposed flight paths. As discussed in Section 4.1.9, noise levels associated with aircraft traffic would be compatible with the surrounding environment and an incompatible noise zone would not be generated. Other potential environmental impacts associated with the proposed action (e.g., temporary increase in air pollution, land use changes) would be limited to specific areas of SRS and not evidenced beyond the site boundary. Air emissions would be short-lived, quickly dispersed, and not impact regional air quality, and there would be no discharges to State waters. Environmental resources such as air, land, water, and wildlife utilized by minority and/or low-income populations living in the vicinity of SRS would not be diminished or degraded by the proposed action. There would be no disproportionately high and adverse human health or environmental effects on minority and low-income populations within SRS's ROI.

4.1.14 Greenhouse Gas Emissions

Greenhouse gas emissions include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_20). The proposed action would result in no new stationary sources of greenhouse gases. There would be a nominal increase in aircraft and vehicular miles

flown and driven (respectively) due to training activities. DOE anticipates that the incremental increase in fuel consumption would not significantly impact the amount of fossil-fuel consumed regionally. DOE anticipates that any increase in greenhouse gas emissions attributable to the proposed action would have a negligible impact on ambient air quality and global climate change.

4.1.15 Human Health

DOE anticipates that impacts to human health and safety would be negligible due to the use of personal protective clothing and equipment and the implementation of appropriate planning and safety practices during the conduct of military training activities. In addition, the comprehensive planning process outlined in the JSOP would serve to protect the health and safety of both military and SRS personnel. This up-front planning process would ensure that the location and timing of Army activities do not interfere with SRS operations, thereby significantly reducing the potential for unexpected encounters. Additionally, Army exercises would not occur in areas where known health and safety hazards exist (e.g., active timber management activities and controlled sites, including radiologically contaminated areas).

4.1.16 Terrorism-Related Impacts

DOE does not believe that the presence of Army units at SRS would increase the probability of a terrorist attack on SRS or that the troops themselves would be an attractive target for such. Measures to ensure that the conduct of Army training activities are not co-opted to gain unauthorized access to SRS are described in the JSOP developed by DOE and the Army (Appendix A). Additionally, existing safeguards and security programs in place at SRS would prevent the successful implementation of terrorism-related activity should unauthorized access to the general site occur. DOE anticipates that the potential for the proposed action considered in this EA to result in terrorism-related activity or impacts at SRS would be negligible.

4.2 Cumulative Impacts

The CEQ regulations define cumulative impact as an impact on the human environment that results when the incremental effects of a proposed action are added to the impacts of other past, present, proposed, and other reasonably foreseeable future actions within given spatial and temporal boundaries (40 CFR 1500-1508). Other past, present, and foreseeable future SRS activities within the area of SRS proposed for Army training that could potentially interact cumulatively with the proposed action include silvicultural activities, maintenance of infrastructure, ecological research, and wildlife management activities, as well as possible undefined future missions. With the exception of noise, DOE anticipates that the direct and indirect effects of these activities, in combination with the direct and indirect effects of the proposed action, would result in a negligible cumulative impact on the human environment.

There would be no direct waste water discharges associated with the proposed action and the disposal of limited quantities of sanitary waste water via the CSWTF would have a

negligible cumulative affect on receiving water quality. DOE does not anticipate that the periodic land application of limited quantities of grey water generated by field kitchen operations would adversely impact (incrementally or cumulatively) the terrestrial ecosystem or underlying groundwater aquifer. With the application of appropriate BMPs during construction-related activities and training events, DOE anticipates that the potential for cumulative impacts on terrestrial resources, downstream water quality and wetland resources would be negligible. DOE anticipates that the potential for any air emissions resulting from the proposed action (e.g., equipment emissions, fugitive dust) to interact with other SRS air pollution sources, or have a cumulative effect on criteria air pollutant concentrations within SRS's airshed, would be negligible. Although the proposed action would result in a minor cumulative increase in SRS's noise environment, DOE anticipates that the incremental increase in noise associated with individual training events would be episodic and would not be considered a significant impact on the human environment. Although establishment of a DZ would result in site-specific terrestrial impacts (e.g., land use/cover changes, soil compaction, and displaced fauna), the land area affected would be small compared to the total acreage available on SRS and DOE anticipates that this activity would not adversely impact DOE's future development or use of SRS. DOE anticipates that the cumulative impact of these land use changes, in conjunction with other ongoing and proposed SRS mission operations, on terrestrial productivity would result in negligible cumulative effect on SRS and environs.

The conduct of military training activities at SRS would not adversely impact DOE's ability to comply with Federal or State environmental laws, regulations, or permit requirements. Multiple training exercises conducted simultaneously would produce negligible to minor adverse impacts of a temporary nature, excepting the permanent impacts described above. Through the JSOP planning process, DOE and the Army would seek to avoid multiple simulaneous training exercises. Such impacts would not be considered additive to produce significant adverse effects. In summary, DOE anticipates that the implementation of the proposed action at SRS would have an overall negligible cumulative impact on the human environment.

4.3 Adaptive Management

The traditional environmental management model used in most NEPA analyses has been called "predict, mitigate, and implement." Such a model depends on the accuracy of predicted impacts and the anticipated results of mitigation activities, and does not consider unforeseen changes in environmental conditions, inaccurate predictions, or previously unknown information. The concept of adaptive management adds "monitor and adapt" to the environmental management model, which can provide a mechanism to adapt or compensate for conditions unanticipated in the original NEPA analysis without entering into an additional NEPA review process.

The proposed action has been determined to not have a significant effect on the human environment. However, there are a number of factors related to SRS and the proposed action that necessitate development and implementation of an adaptive management plan, including the following:

- Political actions can change the SRS mission. An adaptive management plan provides a mechanism within the NEPA analysis process that allows evaluation of Army training impacts on a new or expanded SRS mission.

- NEPA analysis is based on environmental conditions at SRS at the time of the analysis. Unanticipated natural changes in environmental conditions could result in the previous impact determinations being invalid. Adaptive management provides a mechanism to reassess impact determinations relative to changing environmental conditions.

- Predicted impacts on the human environment could prove inaccurate; the magnitude of intensity of impact could be greater than anticipated in the NEPA analysis. Adaptive management provides a way to compare predicted and actual impacts, and to provide mitigation for unanticipated impacts.

- After the initial NEPA determination and during or after the execution of the proposed action, new or previously unavailable information could become known that would have influenced the original NEPA analysis, had it been known at that time. Adaptive management provides a mechanism to reassess the NEPA analysis using the "fresh" information.

- Unforeseen human activities can cause unanticipated changes in environmental conditions, magnitude or intensity of environmental impacts, and similar unexpected circumstances. Adaptive management allows additional NEPA analysis to compensate for unforeseen events.

The JSOP (Appendix A) provides a basis for adaptive management related to unforeseen impacts. SRS infrastructure and environmental resources (JSOP, Chapter 8) are mentioned in general terms. Detailed plans specific to the resource would be prepared and approved on an as-needed basis and according to a stand-alone adaptive management plan specific to the Army training proposed action.

4.4 Potential Impacts Related to Implementation of the 'No Action' Alternative

Implementation of the 'No Action' alternative would not significantly impact the human environment. Under this alternative, SRS would periodically be utilized by individual military units for limited, short-term, non-live-fire tactical training events. This baseline level of military training at SRS would continue, with each proposed training events being reviewed under NEPA on a case-by-case basis.

5.0 REGULATORY AND PERMITTING REQUIREMENTS CONSIDERED

DOE policy is to conduct its operations in compliance with all applicable Federal, State, and local laws and regulations, and Federal Executive Orders (EOs). Following is a

listing of selected statutes, regulations, and EOs that is applicable to the proposed action and alternatives considered in this EA.

5.1 National Environmental Policy Act (NEPA) of 1969, as amended (42 USC 4321 et seq.)

NEPA requires Federal agencies to evaluate the effect of proposed actions on the quality of the human environment. NEPA review should be conducted during the planning and decision-making stages of a project or proposed action and be completed prior to project implementation. DOE has prepared this EA in accordance with the requirements of NEPA, as implemented by CEQ and DOE NEPA regulations (40 CFR Parts 1500 – 1508 and 10 CFR Part 1021, respectively).

5.2 Federal Clean Water Act, as amended (33 USC 1251 et seq.)

The objectives of the Clean Water Act (CWA) are to restore and maintain the chemical, physical, and biological integrity of the nation's waters. The CWA prohibits the 'discharge of toxic pollutants in toxic amounts to navigable waters of the United States'. The Act also establishes guidelines and limitations for discharges from point and nonpoint sources and a permitting program known as the NPDES program. The USEPA has delegated primary enforcement authority for the CWA and the NPDES permitting program to SCDHEC for waters of the State.

5.3 South Carolina Pollution Control Act (SC Code Section 48-1-10 et seq., 1976)

In the State of South Carolina, SCDHEC is the agency authorized to issue, deny, revoke, suspend, or modify permits (Pollution Control Act, South Carolina Code Section 48-1-50(5), *Powers of the Department*).

5.4 South Carolina Standards for Stormwater Management and Sediment Reduction (SCDHEC Regulation R.72-300)

This SCDHEC regulation requires that stormwater management and sediment control plans must be approved by the State prior to engaging in any land disturbing activity related to residential, commercial, industrial, or institutional land use not otherwise exempted or waived. This approval authority has been delegated to SRS. Construction-related activities considered in this EA would be conducted in accordance with this regulation.

5.5 Endangered Species Act, as amended (16 USC 1531 et seq.)

The Endangered Species Act is intended to prevent the further decline of endangered and threatened species and to restore these species and their habitats. The Act also promotes biodiversity of genes, communities, and ecosystems. The proposed action considered in this EA would not adversely impact the species of concern (see Section 4.1.12). As part of the NEPA public review process, this EA and supporting BE were provided to the USFWS for their review and consultation. Based on information provided by the Army

in the Biological Evaluation (Appendix B), the USFWS has determined that the proposed action is not likely to adversely affect plants and animals known to occur on SRS that are protected by the Endangered Species Act (Appendix D).

5.6 National Historic Preservation Act, as amended (16 USC 470 et seq.)

The National Historic Preservation Act provides that sites possessing significant national historic value be placed on the National Register of Historic Places. If a particular Federal action impacts a historic property, consultation with the Advisory Council on Historic Preservation is required. This consultation usually leads to a Memorandum of Agreement describing mitigative actions that must be implemented to minimize adverse impacts to the historic property. Coordination with the State Historic Preservation Officer also ensures that potentially significant sites are properly identified and appropriate mitigation actions implemented.

5.7 Migratory Bird Treaty Act (16 USC 703 et seq.)

This Act makes it unlawful to pursue, hunt, take, capture, kill or sell selected birds, such as the American bald eagle. The statute does not discriminate between live or dead birds and also grants full protection to any bird parts, including feathers, eggs and nests. Over 800 species are currently on the list.

5.8 Bald and Golden Eagle Protection Act (16 USC 668-668d)

This Act prohibits anyone, without a permit issued by the Secretary of the Interior, from "taking" bald eagles, including their parts, nests, or eggs. The Act defines "take" as "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb."

5.9 Environmental Restoration and Waste Management Remediation/Cleanup

SRS was placed on the National Priority List (NPL) in December 1989, under the legislative authority of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986. The site was added to the NPL because there have been releases or threatened releases of hazardous substances, pollutants, or contaminants, which USEPA evaluated through a hazard ranking system on the likelihood that a release occurred, on the characteristics of the waste, and on the environment affected by the releases. Placement on the NPL indicated SRS warranted further investigation to assess the nature and extent of the public health and environmental risks associated with the releases, and to determine the appropriate remedial action(s), if any. DOE, USEPA Region 4, and SCDHEC–in accordance with Section 120 of CERCLA–entered into the Federal Facility Agreement (FFA), which became effective August 16, 1993, and which directs the comprehensive environmental remediation of the site. The FFA, which integrates CERCLA and Resource Conservation and Recovery Act (RCRA) requirements to achieve a comprehensive remediation of SRS, governs the corrective/remedial action

process, sets annual work priorities, and establishes milestones for activities. The agreement also coordinates administrative and public participation requirements.

SRS has 515 waste units in the Area Completion Projects program, including RCRA/CERCLA units, Site Evaluation Areas, and facilities covered under the SRS RCRA permit. At the end of FY10, 386 units were complete or in the remediation phase (373 complete and 13 in remediation).

The status of these units, and the potential for the presence of chemical or radiological contaminants, must be taken into account when planning for training that could involve them. CERCLA Records of Decision (and RCRA Hazardous Waste Permit modifications) may impose enforceable land use restrictions for some land areas and decommissioned facilities, which would require regulatory approval for their training use by the military; and waste units and facilities that have been identified (listed in the FFA Appendix C or G.1) as containing actual or potential contamination that may warrant cleanup action must be avoided.

5.10 Integrated Safety Management System (48 CFR 970.5223-1)

The Safety Management System requires that activities conducted on SRS be done so safely and that there is adequate protection for employees, the public, and the environment. This system requires that hazards associated with the action to be performed are identified and evaluated and that administrative and engineering controls be implemented to prevent or mitigate these hazards and any related accidents or unplanned releases or exposures.

5.11 Executive Order 11988 (Floodplain Management)

This EO directs Federal agencies to establish procedures to ensure that the potential effects of flood hazards and floodplain management are considered for any action undertaken. Impacts to floodplains are to be avoided to the extent practicable.

5.12 Executive Order 11990 (Protection of Wetlands)

This EO requires Federal agencies to avoid short- and long-term adverse impacts to wetlands whenever a practicable alternative exists.

5.13 Executive Order 12898 (Environmental Justice)

This EO requires Federal agencies to identify and address disproportionately high and adverse human health or environment effects of its programs, policies, or actions on minority and low-income populations.

5.14 Executive Order 13186 (Protection of Migratory Birds)

This EO requires Federal agencies to assess and mitigate the impacts of their actions on migratory birds and promote the conservation of migratory bird populations and their habitat.

5.15 Executive Order 13423 (Strengthening Federal Environmental, Energy, and Transportation Management

This EO instructs Federal agencies to conduct their environmental, transportation, and energy-related activities in an environmentally, economically and fiscally sound, integrated, continuously improving, efficient, and sustainable manner. As part of this scope, Federal agencies are required to reduce their greenhouse gas emissions.

6.0 AGENCIES AND PERSONS CONSULTED

The United States Department of the Army, United States Department of Interior Fish and Wildlife Service, University of Georgia Savannah River Ecology Laboratory, University of South Carolina Savannah River Archaeological Research Program, United States Department of Agriculture Forest Service-Savannah River and the Savannah River National Laboratory were consulted during the preparation of this environmental assessment.

7.0 REFERENCES

Legislation

16 USC 703 *et seq*. Migratory Bird Treaty Act.

16 USC 668-668d. Bald and Golden Eagle Protection Act.

16 USC 1531 *et seq*. Endangered Species Act.

16 USC 470 *et seq*. National Historic Preservation Act.

31 USC 1535. Economy Act.

33 USC 1251 *et seq*. Federal Clean Water Act.

42 USC 4321 *et seq*. National Environmental Policy Act.

42 USC 9601 *et seq*. Comprehensive Environmental Response, Compensation, and Liability Act.

Regulations

10 CFR 1021, U.S. Department of Energy, National Environmental Policy Act Implementing Procedures.

40 CFR 1500-1508, Council on Environmental Quality, Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act.

40 CFR 81.311, 81.341, U.S. Environmental Protection Agency, Designation of Areas for Air Quality Planning Purposes.

48 CFR 970.5223-1, U.S. Department of Energy, Integration of Environment, Safety, and Health Into Work Planning and Execution.

Executive Orders

Executive Order 11988. Floodplain Management.

Executive Order 11990. Protection of Wetlands.

Executive Order 12898. Environmental Justice.

Executive Order 13186. Protection of Migratory Birds.

Executive Order 13423. Strengthening Federal Environmental, Energy, and Transportation Management.

SRS Reports and Regulatory Documents

Bauer, L.R., D.W. Hayes, C.H. Hunter, W.L. Marter and R.A. Moyer 1989. Reactor Operation Environmental Information Document, Volume III: Meteorology, Surface Hydrology, Transport and Impacts, WSRC-89-817. Westinghouse Savannah River Company, Savannah River Site, Aiken, SC.

Davis, C.E. and L.L. Janecek 1997. DOE Research Set-Aside Areas of the Savannah River Site, Savannah River Laboratory, Savannah River Site, Aiken, SC.

DeLay, L., R. O'Conner, J. Ryan and R.R. Currie 1993. Recovery Plan for Pondberry (Lindera melissifolia [Walt.] Blume). U.S. Fish and Wildlife Service, Atlanta, GA.

DOA (U.S. Department of the Army) 2009. Interagency Agreement Between U.S. Departmment of Energy, Savannah River Site and U.S. Department of the Army, Fort Gordon. Headquarters United States Army Signal Center and Fort Gordon, Fort Gordon, GA. September 4, 2009.

DOE (U.S. Department of Energy) 1982. Final Environmental Impact Statement, Defense Waste Processing Facility, Savannah River Plant, Aiken, S.C., DOE/EIS-0082 UC-70. Assistant Secretary for Defense Programs, Office of Defense Waste and Byproducts Management, Washington, D.C.

DOE (U.S. Department of Energy) 1993. Centralization and Upgrading of the Sanitary Wastewater System at the Savannah River Site, DOE/EA-0878. Savannah River Operations Office, Savannah River Site, Aiken, SC.

DOE (U.S. Department of Energy) 1994. Environmental Assessment for the Domestic Water Supply Upgrades and Consolidation on the Savannah River Site, DOE/EA-0943. Savannah River Operations Office, Savannah River Site, Aiken, SC.

DOE (U.S. Department of Energy) 1999. Surplus Plutonium Disposition Final Environmental Impact Statement, DOE/EIS-0283. Office of Fissile Materials Disposition, Washington, D.C.

DOE (U.S. Department of Energy) 2002. High-Level Waste Tank Closure Final Environmental Impact Statement, DOE/EIS-0303. Savannah River Operations Office, Aiken, SC.

DOE (U.S. Department of Energy) 2007. Memorandum of Understanding Between the U.S. Department of the Army and the U.S. Department of Energy Concerning the Use of Savannah River Site Lands for Military Training Activity. Office of Environmental Management, Washington, DC. June 11, 2007.

DOE (U.S. Department of Energy) 2011. Final Long-Term Management and Storage of Elemental Mercury Environmental Impact Statement, DOE/EIS-0423. Office of Environmental Compliance, Washington, D.C.

Kilgo, J.C. and J.I. Blake (eds) 2005. Ecology and Management of a Forested Landscape: Fifty Years on the Savannah River Site. Island Press, Covelo, CA.

King, A. 2010. Army EA. E-mail Transmittal from A. King to G. L. Wingard Dated November 15, 2010. South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia, SC.

Moon, R. 2010. Water Gap Site. E-mail Transmittal from R. Moon to C. B. Shedrow Dated April 19, 2010. Savannah River Archaeological Research Program, South Carolina Institute of Archaeology and Anthropology of the University of South Carolina, Columbia, SC

Nelson, E.A. 2010. Drop Zone Habitats, SRNL-L4310-2010-00001. Savannah River National Laboratory, Savannah River Nuclear Solutions, Savannah River Site, Aiken, SC.

Noah, J.C. 1995. Land-Use Baseline Report: Savannah River Site, WSRC-TR-95-0276. Westinghouse Savannah River Company, Savannah River Site, Aiken, SC.

NRC (Nuclear Regulatory Commission) 2005. Environmental Impact Statement on the Construction and Operation of a Proposed Mixed Oxide Fuel Fabrication Facility at the Savannah River Site, South Carolina, NUREG-1767. Division of Waste Management and Environmental Protection, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C.

Robert, A.J., K.S. Wheaton, W.M. Weiher and T. Hayden, 1997. Integrated Endangered Species Management Recommendations for Army Installations in the Southeastern United States. Construction Engineering Research Laboratory (Army), Champaign, IL.

Rogers, V.A., 1990. Soil Survey of Savannah River Plant Area, Parts of Aiken, Barnwell, and Allendale Counties, South Carolina. United States Department of Agriculture, Soil Conservation Service, Aiken, SC.

SRARP (Savannah River Archaeological Research Program) 1989. Archaeological Resource Management Plan of the Savannah River Archaeological Research Program. Savannah River Archaeological Research Program, South Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia, SC.

SRARP (Savannah River Archaeological Research Program) 2009. Annual Review of Cultural Resource Investigations by the Savannah River Archaeological Research Program: Fiscal Year 2009. Savannah River Archaeological Research Program, South

Carolina Institute of Archaeology and Anthropology, University of South Carolina, Columbia, SC.

SRNS (Savannah River Nuclear Solutions) 2010. Savannah River Site Environmental Report for 2009. Savannah River Nuclear Solutions, Savannah River Site, Aiken, SC.

USDA (U. S. Department of Agriculture) 2000. Savannah River Site Red-cockaded Woodpecker Management Plan. US Department of Agriculture Forest Service-Savannah River (USFS-SR), New Ellenton, SC.

USDA (U. S. Department of Agriculture) 2010. 2009 Amendment to Savannah River Site Red-cockaded Woodpecker Management Plan. US Department of Agriculture Forest Service-Savannah River (USFS-SR), New Ellenton, SC.

Wike, L.D., E.A. Nelson, J.J. Mayer, R.S. Riley, and W.L. Specht 2006. SRS Ecology Environmental Information Document, WSRC-TR-2005-00201. Washington Savannah River Company, Savannah River Site, Aiken, SC.

APPENDIX A

JOINT STANDARD OPERATING PROCEDURES (JSOP) FOR MILITARY TRAINING AT THE SAVANNAH RIVER SITE

APPENDIX B

BIOLOGICAL EVALUATION FOR THE PROPOSED UNITED STATES ARMY MILITARY TRAINING ACTIVITIES ON THE SAVANNAH RIVER SITE

APPENDIX C

OPERATIONAL NOISE CONSULTATION NO. 52-EN-0D55-10 OPERATIONAL NOISE CONTOURS PROPOSED AVIATION ACTIVITY SAVANNAH RIVER SITE AIKEN, SOUTH CAROLINA 12 APRIL 2010

APPENDIX D

U.S. FISH AND WILDLIFE SERVICE CONCURRENCE LETTER REGARDING THE "NOT LIKELY TO ADVERSELY AFFECT" DETERMINATION OF THE BIOLOGICAL EVALUATION

DRAFT

Joint Standard Operating Procedures (JSOP) For Military Training at the Savannah River Site

August 2011

U.S. Department of Energy, Savannah River Operations Office, Savannah River Site
And
U.S. Department of The Army, Fort Gordon, Georgia

DISTRIBUTION STATEMENT A. Approved for public release; distribution is unlimited.

Chapter 1

General,

Chapter 2
Responsibilities

Chapter 3
Training Event Planning and Approval Process

Chapter 4
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Environmental Compliance, Protection, and Consideration

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Chapter 1
General

1.1 Purpose
The purpose is to provide the details for implementing the commitments between the Army and the Department of Energy (DOE) as stipulated in the Memorandum of Understanding (MOU) dated Sept., 7th 2007 relating to military training at the Savannah River Site (SRS) and to serve as the controlling document that establishes the parameters and guidance for any lower level policies and procedures as may be deemed necessary. As such, this document is an extension of, and is incorporated into, the Interagency Agreement (IAG) between the U.S. Army-Fort Gordon and Department of Energy – Savannah River Operations Office (DOE-SR) dated Sept. 4, 2009. The MOU and IAG can be found in appendix P and Q. While the Environmental Assessment (EA) for Military Training at SRS analyzed the impacts for a range of potential Army activities for portions of the Site, it should not be considered as approval for any specific activity at any particular location. The stipulations in this JSOP describe the processes and conditions for approval for any activity at any location, all of which will be within the umbrella of the range of uses considered in the EA.

1.2 Scope
This JSOP specifies the overarching actions and responsibilities to be taken by all SRS Organizations and all military organizations relative to the coordination, scheduling and conducting of military training at SRS and the use of Site land and facilities. It is designed to facilitate combat realism in training, maximize use of facilities and training areas, eliminate/ minimize safety hazards and unsafe practices, and avoid/minimize interference with Department of Energy (DOE) operations on SRS. To minimize the impact on SRS organizations, the processes require the Army to carry out as much of the administrative and coordination efforts as reasonably achievable in accordance with the provisions stipulated herein.

1.3 Explanation of Abbreviations and Terms
Abbreviations and special terms used in this JSOP are explained in the glossary.

1.4 Applicability
The provisions of this JSOP apply to all organizations and individuals involved in any aspect of military training activities at SRS. This includes SRS organizations as was well as military units. Military units include the Active Army, Army Reserves, Army National Guard, Department of the Army Civilians (DAC), sponsors and military contractors associated with and or attached to the Army for the purpose of training on SRS. This is also intended to be applicable to and inclusive of other military organizations such as the Navy, Air Force, and Marine Corps, the Coast Guard and or joint operations of each branch of the Armed Forces utilizing SRS for training purposes. As such, references to the Army or military throughout the document may be interchangeable and intended convey this inclusion. Requests for training by these organizations would be submitted through the Fort Gordon Range Control – Training Facility Coordinator (TFC) and approved by DOE-SR as stipulated. Military personnel as well as military associated personnel shall be considered as SRS workers while on the site and receive training appropriate to this designation as stipulated herein.

1.5 Deviations and Amendments
No deviations may be granted for requests not covered in this JSOP, the MOU, IAG, or that are not considered within the scope of the approved Environmental Assessment. No lower level procedures or processes shall be developed that conflict with or deviate from the guidance provided herein. As necessary, amendments to the JSOP may be accomplished through mutual agreement of both parties. In the case of minor changes of an editorial or clarification nature, approval may be granted by the AMIP DOE-SR and the DPTMS-FG. Material changes must be approved by the Manager DOE-SR and the Garrison Commander, Fort Gordon.

Chapter 2
Responsibilities

2.1 Department of Energy Savannah River POC (DOE-SR POC)
The Federal employee at SRS designated as the central point of contact responsible for operational oversight, coordination and implementation of the JSOP for Army training activities on Site. All overall requests, distributions, and approvals will be through the DOE-SR POC. This does not preclude direct Army contact with other SRS organizations for implementation of approved activities and training plans. Responsibilities of other SRS organizations will be as provided for specific topics throughout the document.

2.2 DOE Assistant Manager for Integration and Planning (AMIP)
The AMIP is the Senior Manager at SRS responsible for the overall coordination, implementation, and oversight of the JSOP at SRS. Other SRS Assistant Managers and Office heads may be responsible for specific provisions of the JSOP,

2.3 SRNS Interface Management Office
SRNS Interface Management Office is the coordinating organization of the Site Management and Operating Contractor. As requested and in accordance with the process specified in this SOP, they may coordinate the delivery of specific services to support Army training activities.

2.4 Fort Gordon Directorate of Plans, Training, Mobilization, and Security (DPTMS)
DPTMS is responsible for providing the oversight of Army activities for the policies and procedures governing establishment and implementation of the SRS training mission. DPTMS will ensure adequate staffing of Installation Range Control personnel to support the SRS mission.

2.5 Chief-Training Division, Fort Gordon (DPTMS)
The chief provides guidance to the Fort Gordon Range Manager and Training Facility Coordinator (TFC) with reference to costs and long range goals in planning the SRS Training Mission. The chief receives and coordinates with other installation Major Commands (MACOMs) reference specific training requests for SRS.

2.6 Fort Gordon Range Control (FGRC) Operations
Range Control Operations supports Range Control personnel assigned to DOE-SR when scheduled training is being conducted.

2.7 Fort Gordon Installation Range Manager
The Army Installation Range Manager has overall responsibility for the safe conduct of Army training on SRS. The Range Manager provides guidance to the TFC for development of the SRS JSOP.

2.8 Fort Gordon Range Control - Training Facility Coordinator (TFC) for SRS
Under the oversight of DOE-SR, the Fort Gordon Range Control - TFC is the primary liaison for Army training activities and has overall responsibility for coordinating the Army training mission on SRS. The TFC will develop necessary requirements and logistical support structures for units to occupy and train safely on SRS. The FGRC-TFC will assist units in developing and implementing training plans that will help assure they are in compliance with the provisions of the JSOP with regard to environmental protection, natural resource management, and any other DOE mission requirements.

2.9 Battalion/Squadron Commanders
Battalion/Squadron Commanders (or their designated representatives with assumption of command orders) will, through the FGRC Training Facility Coordinator (TFC),:

a. Provide a completed Unit Coordination Packet through the FGRC-TFC, NLT 30 working days from the first day of training. See Appendix G.

b. Ensure all persons in their command receive an SRS Unit Orientation Briefing prior to access through the SRS boundary. See Appendix A.

c. Ensure persons in their command who are detailed to perform Range OIC and RSO duties are thoroughly briefed on SRS Restricted Areas, Site Emergency Procedures, Communications, and are technically proficient on all weapon systems and training ammunition to be used on SRS.

d. Ensure designated SRS facilities and training areas are scheduled a minimum of 60 days in advance. All approved SRS training facilities will be scheduled through TFC.

e. If required, ensure aerial and ground reconnaissance is completed prior to unit occupation.

f. At least 3 days prior to egress from SRS lands; ensure coordination has been initiated for clearance of Training Area and Facilities. This includes, trash, ammunition residue, clean-up, and damage repair.

g. Designate Battalion POCs as needed for the TFC to coordinate unit training activities.

h. At the end of each training day, provide roll-up of expended blank ammunition, pyrotechnics, and smoke. The roll-up will be provided to the FGRC-SRS Operations.

i. Submit form DA 7566-R Composite Risk Assessment Form, prior to occupation.

2.10 Unit Officers-In-Charge (OICs) and Range Safety Officers (RSOs)

All soldiers or DOD personnel serving as Unit Officers-In-Charge (OICs) and Range Safety Officers (RSOs) will comply with all responsibilities as provided in this JSOP and as directed by the FGRC-TFC.

The OIC is overall responsible for the conduct of safe training on SRS. Specific guidelines and requirements will be addressed in the SRS Orientation Briefing; see Appendix A. OICs will maintain positive communications with FGRC-SRS at all times. OICs and RSOs will not perform additional duties or participate in training. OICs and RSOs may change responsibilities upon approval with FGRC-SRS.

Chapter 3
Training Event Planning and Approval Process

3.1 General
The planning and approval process for individual training events will be as described in this chapter. The chief tools for use in planning a training event are this JSOP, the Environmental Assessment of Army training at SRS, and the Training Area Planning Map for Army Activities at SRS. While the Environmental Assessment (EA) for Military Training at SRS analyzed the impacts for a range of potential Army activities for portions of the Site, it should not be considered as approval for any specific activity at any particular location. The stipulations in this JSOP describe the processes and conditions for approval for any activity at any location, all of which will be within the umbrella of the range of uses considered in the EA.

The TFC will provide the units with the necessary elements from these tools and assist them in developing and submitting training proposals for approval. The combination of maps and data will allow the units to identify areas with the potential to accommodate training, understand limitations or restrictions (threatened and endangered species, etc.) that might affect the type or suitability of a location for a training activity, and provide steps they may take to mitigate conflicts or impacts. By using these tools when developing a proposal for a training event, the final package should have addressed or eliminated potential impacts and assure the training is conducted in a safe manner and does not negatively impact SRS missions and activities.

References to "DOE approval" throughout this document shall be construed to mean the approval has been granted in accordance with (IAW) the process and provisions of this chapter unless otherwise stipulated. The term "DOE" shall be construed to include or be interchangeable with hyphenated references such as DOE-SR, DOE-SRS, etc.

3.2 Site Use Approvals
The Environmental Assessment describes the land use activities and boundaries of the areas approved for training, including areas proposed for fixed facilities (e.g., Drop Zones, Forward Operating Bases, approved dig areas, etc.). It also includes the location of areas that are off limits to training as well as the location of sites/areas of potential interference which may require specific mitigating restrictions/requirements on training activities (i.e., cultural resources, threatened and endangered species, radiological hazards, etc.). These Joint Standard Operating Procedures, as stipulated throughout this document, provide guidance on mitigating actions to be taken according to specific potential interferences.

Based on the Environmental Assessment document together with the Joint Standard Operation Procedures (JSOP) a Site Use Permit is granted for conducting the types of training described in the EA for the areas identified as available for training.

With the overall Site Use Permit for Army training as the basis, the 30 Day Request For Approval package (see **Section 3.6.3**) for each individual training event will be reviewed as an Informally Approved Site Use Permit in accordance with the Site Real Property Configuration Control process. This will provide additional assurance that potential changes in site conditions are not overlooked. The approved Site Use Permit for Army Training will be reviewed annually to determine if it changing conditions make revisions and resubmission a prudent action.

In addition to Site Use considerations, individual training events also require pre-coordination and planning with multiple SRS organizations relative to Site services. Another purpose of the 90,60,30 day planning and approval process as established by this JSOP (see **Section 3.6.**) is to allow SRS to determine the level of Site support that will be required for each training event and to inform the Army of current or scheduled Site activities that should be considered in their training plans. This allows the Army

to propose training locations and develop training plans such that potential conflicts will be avoided and, as needed according to the training locations, include in their training plans any mitigating actions necessary as stipulated in the JSOP.

As described above, the 90, 60, 30, Day Approval Process is not a replacement for, or duplication of, the Site Use Process. Rather it a planning and coordinating process that assures conformance with the approved Site Use Permit.

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3.3 Support Costs

Units deploying to SRS should plan and prepare their training event as if it were an actual deployment to a foreign nation. For the most part, the unit must plan to be self-sustaining throughout their training event. The Fort Gordon Range Control - Training Facility Coordinator (TFC) will facilitate and assist units in planning for basic health needs, i.e., port-a-lets, trash receptacles, and water locations. Such services may be secured on a reimbursable basis from SRS. Depending on the type of training activity and support requirements, additional reimbursable costs may be incurred for use of the Site. The identification and determination of reimbursable services and cost will be developed during the 90, 60, 30 day planning and approval process described in this chapter. The process for reimbursement to SRS will be IAW the provisions as specified in Appendix I.

3.4 Annual Training Forecast

At the beginning of each fiscal year the (TFC) will provide the DOE-SR POC with a general forecast of the projected annual training requirements with updates on quarterly updates. The annual forecast breaks down the estimated rotation of all units expected to deploy to and train on SRS. This forecast will include an estimate of total numbers of aircraft, vehicles, and personnel as well as any anticipated support or services that may be requested. It should be noted that to the greatest degree possible the Army will be operating in a self sustaining manner and support should be minimal.

The DOE-SR POC will meet with the TFC to review the annual training forecast and finalize the forecast for distribution. Once finalized, the DOE-SR POC will distribute for review utilizing the list in Appendix J. Each recipient will further distribute for internal reviews and coordination as appropriate. It is recognized that many factors will affect training requirements and there will generally be adjustments in actual implementation.

Recipients will utilize the forecast for initial planning and provide estimated costs for services, as applicable. The DOE-SR POC will facilitate coordination and resolution of issues.

3.5 SRS Training Area Planning Map

The Training Area Planning Map (1:50,000 scale) is a basic tool for development of military training activities at the SRS. It was developed to be used in conjunction with the Joint Standard Operating Procedures and by reference is considered to be part of the JSOP. It provides a general reference of the location of areas available for training as well as an initial indicator of considerations and limitations for use of the site. Because of the scale, the location notations may appear to be much larger and limiting than actual ground conditions. Some areas may be too small to be accurately reflected as to size or configuration but are depicted to indicate a general location. Therefore, in some case, detailed planning may need to be drilled down to smaller scale maps to better reflect locations and actual size and include the identification of proposed areas for training, identify issues/considerations within the proposed training area that may affect the training; and identify any mitigating actions that may be required to ameliorate/avoid potential impacts or conflicts.

To facilitate effective planning for training activities for various areas of the Site, the map legend is cross walked to applicable sections of the JSOP.

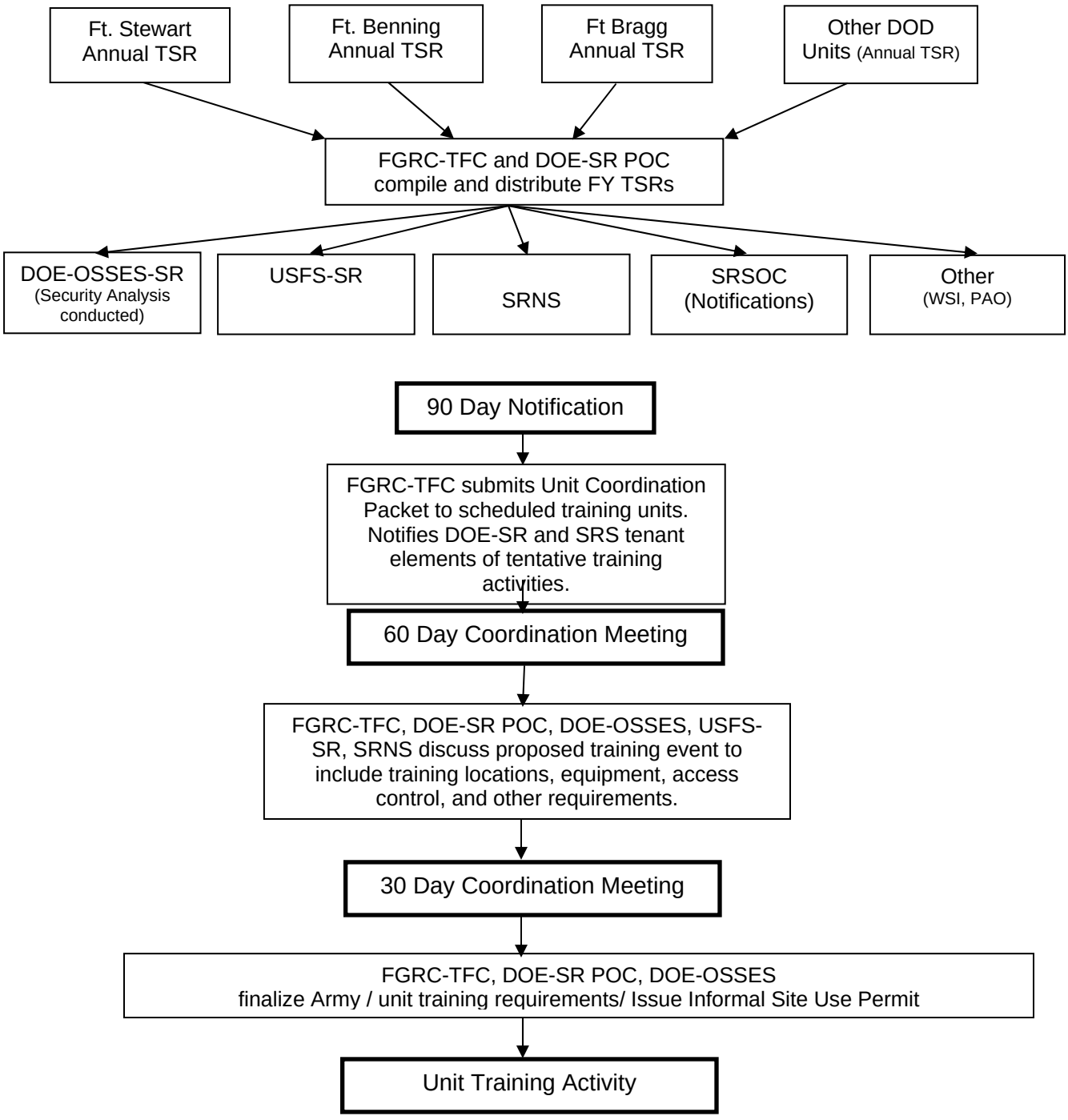
Exceptions or special considerations to the general provisions depicted on the Training Area Planning Map may be specifically spelled out in various sections of this JSOP. Requests for exceptions or special considerations will be evaluated during the detailed exercise-specific coordination that is conducted

during the planning and approval process described in Section 3.6 and, if approved, stipulated in the approved training plan.

Training units may request assistance from the Training Facility Coordinator (TFC) in utilizing the map and the JSOP in the development of training proposal packages.

Annual Training Forecast Flow Chart

TSR = Training Support Requirements



3.6 Notification Process - 90, 60, 30 Day

The TFC will provide a Unit Coordination Packet Memo (see appendix F) which includes the requisite training planning maps and associated data to units anticipating training activities at SRS. This packet will be completed by the Army Unit and returned to the TFC in sufficient time such that the TFC may provide the requisite information to the DOE-SR POC NLT 90 working days prior to the start of training.
Note: Special Operations Units requesting not to submit specific unit information they consider sensitive due to real world operational requirements must coordinate through the TFC.

3.6.1 90 Day Notification.

At least 90 days in advance of a proposed activity, the DOE-SR POC receives from the TFC a written draft of the training proposal including any services related to the exercise which may be requested from the Site.

The DOE-SR POC will provide for site distribution and review utilizing the distribution list in Appendix J. SRS organizations will provide responses to the DOE-POC, who then will provide consolidated comments to the TFC. Responses should provide estimates of the cost for any services requested by the Army.

Under the guidance of, and in coordination with, the DOE-SR POC, the TFC will work to coordinate comments and resolve issues in a timely manner to refine the training proposal in preparation for the 60 day submission.

3.6.2 60 Day Scheduling and Training Coordination Meeting

At least 60 days prior to each training event, a draft of the proposed training exercise will be provided to the DOE-POC. The DOE-POC will distribute the information utilizing the distribution list in Appendix J and initiate a coordination meeting as needed to discuss the specifics of the proposed training activity. Based on the training event, representatives of the Army training unit may attend the coordination meeting.

During this meeting, tentative scheduling of facilities and training areas will be discussed. Discussion may include but is not limited to the following:

- Access control requirements and agreements.
- Logistical support; port-a-lets and trash receptacles.
- Training land and facility usage.
- Draft Composite Risk Management/Safety Plan (Appendix N).
- Environmental Concerns including land use restrictions/limitations or unique hazardous substance considerations.

The TFC will work with the units in developing a final training plan and request for approval package to be used for the 30 day submission. The maps included in these packages will be at an appropriate scale for review and approval as well as for use by the units.

3.6.3 30 Day Unit Coordination Packet Submission

The final unit coordination packet will be completed by the Army Unit and returned to the TFC such that the TFC may provide a finalized proposed training exercise to the DOE-SR POC NLT 30 days prior to the first day of training. In most cases it is expected that the final proposal will not be substantially changed from the 60 day proposal other than to reflect any adjustments made after the final resolution of the 60 day review comments. Data in the submission includes:

a. Personnel Roster and or Flight Manifest.
b. Equipment List.
c. Training Ammunition List.
d. Access and Egress points.
e. SRS Aviation Over flight Approval Request.
f. Facility and Training Area Occupation Checklist.
g. Approved, unmarked 1:50,000 SRS Site Map(s).
h. Mission Essential Tasks List.

i. Orientation Briefing.
j. DA-Form 7566-R Composite Risk Management/Safety Plan (Appendix N)..
k. Remote worker program compliance strategy.
l. Exact training locations and facilities proposed for training.
m. Identification and location of areas of special consideration (such as endangered species) and the steps to be taken to mitigate impacts. These should be included in the orientation briefing.
n. List of services to be provided by SRS and the estimates of the cost as provided by Site Organizations

The DOE-SR POC will distribute the 30 day submission package, via e-mail, to the SRS Organizations specified in appendix J as well as submitting it through the Site Real Property Configuration Control process for distribution as an informally approved Site Use Permit. Site organizations will be given three working days for a final review and concurrence after which the DOE-SR POC will provide approval, or approval with conditions, to the TFC and furnish to the DOE –SR Contracts Management Division the scope and cost of all service to be provided by SRNS.

The Army will transmit funding to DOE for services to be provided IAW appendix I.

3.7 Short Notice Training events
DOE-SR recognized that there may be some cases in which ongoing real world missions for the Army may create training exigencies. In such cases the Army may request DOE-SR grant an expedited approval process of shorter duration. DOE-SR will accommodate such requests when reasonably possible.

3.8 Safety Plans/Processes
Each training plan will include a safety plan/process to provide reasonable safety protocols commensurate with the exercise. Features common to a safety plan/process would include identification of hazards, safety briefings, and designation of responsibility for implementation/observation of conformance to the safety plan/process. The safety plan/process for military activities is composed of several aspects for each exercise. They are as follows:

- Each unit will review the SRS Orientation briefing (Section 4.6) which includes information on Site safety considerations.
- A Composite Risk Management Process (CRM) will be utilized (see Section 4.5)
- The CRM starts with a risk analysis which identifies possible hazards that may be encountered during a training event.
- For each hazard, a control is developed to reduce the residual risk level.
- Officials responsible for implementation/monitoring hazard controls are identified.
- A Composite Risk Management Worksheet is prepared to outline risks, controls, and responsibilities (Appendix N).
- The Composite Risk Management Worksheet is accomplished through:
    - Safety Briefings
    - Rehearsals
    - Supervision
    - Training
    - After action reviews
- Compliance is the responsibility of the first-line supervisors during the event.
- Should additional risk or hazards be identified during the event, the supervisor will modify the event to ensure safety.

When approving a training plan, the DOE role for oversight relative to safety is to review the proposed safety approach for sufficiency and consideration of known hazards. The military is responsible for implementing their safety processes during the conduct of the exercise and assume full liability for all training related activities and the personnel participating in the activity.

Chapter 4
Access Control

4.1 Access / Egress
Units may access and egress the SRS boundary at approved locations by land, air, and water. Site access and egress will be coordinated through the TFC.

4.2 Tracked vehicles
Tracked vehicle access is not authorized on SRS.

4.3 Equipment List
All equipment accompanying Army units will be listed as part of the Unit Coordination Packet, see Appendix F. The TFC will process the Equipment List as part of the 90-60-30 day training approval process. The equipment list will include, but is not limited to the following:

a. All Weapons by type.
b. Training ammunition by DODIC.
c. Communications equipment.
d. Surveillance equipment.
e. Range finding equipment.
f. All Wheeled Vehicles.
g. Trailers. Examples are field kitchens, generators, portable generators, etc.
h. Waterborne vessels.
i. All Aircraft (Helicopter and Fixed Wing).

Equipment which is worn by the soldier will not be included.

4.4 Prohibited Items
Other than those items approved by DOE-Office of Safeguards and Security and Emergency Services (DOE-OSSES), **strictly for the purpose of military training and support**; the items listed below are prohibited from entry onto SRS by land, air, and, water; and are considered contraband.

a. Weapons and Simulated Weapons: A Weapon is defined as any article or devise that is usually used for the infliction of serious bodily injury or harm. Weapons include firearms, bows, cross-bows, axes, machetes, and martial arts weapons.
b. Ammunition and/or Devices: Examples are shotgun shells, blasting caps, grenades, or any item or configuration of items that could cause an explosion.
c. Alcoholic Beverages: Examples are beer, wine, wine coolers, liquor, or other beverages containing alcohol intended for human consumption.
d. Chemical Irritants: Examples are tear gas, chemical mace, or any devise containing agents CN, CS, or other chemical irritants.
e. Controlled Substances: Controlled substances in the possession of a person without a valid prescription are considered contraband.
f. Drug Paraphernalia: Examples are hypodermic needles and syringes, cocaine spoons and vials, roach clips and pipes designed or intended for use with marijuana hashish, hashish oil, or cocaine.
g. Flammable Items: Examples are portable containers of gasoline, kerosene, diesel, or similar items.
h. Stun Guns, Explosive tools and/Ammunition: Stun guns are small devises that generate an electrical shock.

Army units will not bring contraband items on to SRS during site visits, tours, or coordination meetings.

4.5 SRS Unit Orientation Briefing

All Army personnel participating in training on SRS must receive an SRS Orientation Briefing prior to each training event. The SRS Orientation Briefing will be used to certify unit Officers-in-Charge (OICs) and Range Safety Officers (RSOs). See Appendix A. The briefing will include the following:

a. In processing Checklist
b. SRS 1:50,000 Scale Map
c. Radiological and Site Warning Signs and Markers
d. Site security, Emergencies, and Evacuation Procedures
e. Site Access and Egress Procedures
f. Communication Protocols
g. Dangerous Wildlife and Endangered, Threatened, and Sensitive Species
h. Interaction with SRS Site Personnel and Operations
i. Occupation Procedure
j. Accident Reporting
k. Ammunition
l. MEDEVAC Procedures

4.6 Non-badged Army Personnel Ground Access – Coordinating Instructions

4.6.1 Personnel Access Roster

Large numbers of soldiers will be impractical to badge through the Badge Office. The purpose of non-badge access for these soldiers is to gain access on a "one time basis" for the purpose of the training event. Therefore, the training unit will provide the TFC a personnel roster or manifest NLT 5 days from the first day of training. The roster will include the following:

- Name
- Rank
- Citizenship
- Last 4 numbers of the Social Security Number (SSN)
- Clearance of each soldier. Note: Some soldiers may not have clearances.

The Personnel Roster will be screened by DOE-SR prior to Site access. Once the Roster is approved, as directed by the DOE-Office of Safeguards and Security and Emergency Services (DOE-OSSES), the TFC and/or a designated DOE-OSSES representative will verify all unit personnel wishing to access SRS. Verification of each soldier's identification and vehicle inspection will be conducted at the overflow parking lot located in 700-A Area or DOE-OSSES approved inspection location(s). Directions to 700-A Overflow Parking Lot or other approved inspection location will be provided by the TFC to the unit. The soldiers identification will be verified using the soldiers military ID Card, (or other form of SRS approved ID), compared to the Unit Personnel Roster. Soldiers that access SRS using a personnel roster will not be allowed to exit an SRS Site access gate unless it is an emergency or the soldier has completed training and is exiting SRS. Some newer versions of the standard military ID cards have been issued without SSNs. In this case, the soldier may be asked to verbally state the last 4 numbers of their SSN. Additionally, the soldier's photo will be compared as an additional means of identification.

4.6.2 Additions to the Personnel Roster

Army Units may add personnel to their rosters or flight manifests up to 3 working days prior to the training date. No additions can be made within 3 working days (M-F) of the first day of training.

4.6.3 Deletions to the Personnel Roster

Deletions to the personnel roster can be made at any time. Soldiers not present at the time of initial access, may be allowed access at a future date, under direct coordination of DOE-SR and the TFC.

4.6.4 Denied Access to Army Personnel

Personnel denied access to SRS, for whatever reason, become the responsibility of the parent unit for transportation back to home station.

4.7 Badging Procedures

4.7.1 Temporary Site Badges

Temporary badges may be issued for up to 10 days to unit supply representatives or command elements requiring daily entry and exit through an approved site barricade for the purpose of requisitioning supplies, trash disposal, water replenishment, or other logistical support function to maintain unit life support requirements. All Temporary Badge requests will be submitted through the TFC and approved by DOE-SR. The following information must be provided to process temporary site badges.

- Full name
- SSN
- Army unit to include component; reserve or national guard
- Security Clearance if applicable
- Citizenship
- Contractors provide the name of their employer.

Personnel approved for a Temporary Badge will report to the Badge office in building 703-46A at the designated time. Two forms of picture identification are required to complete the badge process. Acceptable forms of Identification can be found in Appendix H. The process includes watching a 17 minute orientation video.

Badges are to be worn in the chest area at all times while on SRS. If challenged, soldiers shall immediately present their site badge for inspection.

Badges shall be returned to a site barricade upon completion of the training event or expiration of the badge, whichever comes first.

Personnel with temporary site badges will enter through a site barricade, or locations approved during the screening process and proceed directly to their designated training location. Initially, FRGC-SRS may escort Army personnel to their designated locations until Army personnel are familiar with the route from the site barricade, to and from their designated training locations

4.7.2 Permanent Site Badges

FGRC, Army Personnel, and military contractors working on SRS for more than 10 consecutive days will apply for a permanent site badge through the TFC. DOE-SR is the approving authority of all requests for permanent site badges. The following information shall be provided for processing permanent site badges (some information may not apply to all).

- Full name
- SSN
- Army unit to include component; Active, Reserve or National Guard
- Security Clearance if applicable
- Citizenship
- Date of Birth (DOB)
- Place of Birth (POB)
- The following additional information is required for Contractors
- Contracting Company Name
- Contract number
- Contract expiration date
- Employment Start Date

Once approved for a permanent site badge, a one day General Site Training (GET) course must be completed (including passing the GET test) to receive the badge. GET Training may be scheduled through the FTC. Badges are available for pickup at the badge office in Building 703-46A the day following the GET training.

4.8 Savannah River Site (SRS) Restricted Areas
The Training Area Planning Map (see section **3.5**) provides overall reference to the location of areas with restrictions on training. The restricted areas depicted on the map will fall into one of two categories, Restricted-Off Limits and Restricted-Special Considerations.

As the name implies, Restricted-Off Limits indicates areas that are off limits for the conduct of military maneuver training. It is intended for general and reasonable application for planning purposes rather than "letter of the law" exclusion. As examples, the vehicle staging area referenced in **Sections 4.3 and 4.15** falls within the Restricted-Off Limits zone as does a section of Highway 125 (from the Jackson Barricade to D-Area) which will be utilized as a main access route by the military. Also, it is not intended to preclude the Site from making special or unique facilities (such as a classroom in the training facility or some other unique facility within the zone) available to military groups.

Restricted-Special Considerations are those areas that are not necessarily off limits but do have additional or special considerations that must be factored into the planning and conduct of training activities. The appropriate sections of the JSOP addressing the special considerations are cross walked on the map legend. Access on main and secondary SRS roads utilized by the general site population in these areas are also available for Army vehicular and/or foot traffic for movement to, and between, training locations.

These categories are depicted on the map through various colors and/or patterns. Because of the scale of the map and complexity of the land use factors, the map cannot reflect all special considerations and some areas may be too small to be accurately reflected as to size or configuration. During the 90, 60, 30 day planning and approval process described in Section 3, on a case by case basis, consideration may be given for transit between training locations through otherwise restricted areas or buffer zones, as well as other exceptions as necessary for the reasonable accommodation of training. If an exception is approved, it will be stipulated in the approved Training Plan.

4.9 Privately Owned Vehicles (POVs)
POVs are authorized on SRS for the purpose of coordination meetings, site visits, and reconnaissance of training sites and facilities. POVs are not authorized by Army Units when in a training status at training locations on SRS. FGRC-SRS operations personnel are authorized POVs at any time. As requested by DOE-SR security personnel, operator(s) of POVs must present the following when attempting ingress or egress at SRS Perimeter Barricades:

- Permanent or temporary SRS Badge.
- Valid State Driver's License.
- Current State Vehicle Registration.
- Current proof of insurance for that vehicle.
  or
- Rental Agreement from Lease Company.

When directed by DOE-SR security personnel, drivers will open all vehicle compartments, trunks, hoods, and doors for inspection to ensure no prohibited items are brought on to SRS. All bags and cases will be inspected. See paragraph 4.4 for list of prohibited items.

4.10 Government Owned Vehicle (GOV) and Tactical Vehicle Access for Site Visits and Reconnaissance of Training Facilities
Ground Access to SRS through perimeter gates is authorized for military units to conduct site visits and reconnaissance. Military vehicles are limited to approved Tactical Vehicles, Government Transportation Motor Pool (TMP) vans, sedans, or similar GOVs. There is a mandatory inspection policy for all tactical vehicles and GOVs accessing SRS for events other than scheduled training. All GOV operators must present the following when attempting to access Savannah River Site Perimeter Barricades:

- Permanent or temporary SRS Badge.
- Valid State Driver's License from the driver of each vehicle driven.

Prior to arrival at the Site, the units should assure tactical vehicles are in an adequately clean condition such that the transportation of noxious weeds and seeds onto the Site is avoided.

4.11 SRS Perimeter Gate Access for Army Wheeled Vehicles
Once approved by DOE-SR, authorized wheeled tactical vehicles, GOVs, and Army Convoys will access SRS under escort to the designated training area by FGRC-SRS.

Unless specifically approved by DOE-SR and documented in an approved Training Plan, access by vehicle and foot traffic onto SRS through locations (wood lines, off-road), other than Site Perimeter Barricades is prohibited.

Personnel with temporary site badges will enter through an approved site barricade and proceed directly to their designated training location. Initially, FRGC-SRS may escort Army units or personnel to their designated locations until Army personnel are familiar with the route from the site barricade to and from their designated training locations.

Vehicle access onto SRS through gates other than site barricades may be approved by DOE-SR. Example of such locations are Hwy 125 side gates into Gun Site 51, L-Lake gate, or Road 9. Units will be inspected by a DOE-SR representative prior to access at theses side gates.

Unless specifically approved, personnel with temporary site badges will not enter industrial areas for any reason.

4.12 Vehicle Staging
Prior to a training event, Army Tactical wheeled vehicles and GOVs may temporarily stage in the 700 A-Area overflow parking lot. Any tactical vehicles or GOVs denied access to SRS, for whatever reason, are the responsibility of the parent unit to ensure it returns to home station. Vehicles denied access may temporarily park in A-Area overflow parking lot until access is approved or the vehicle leaves SRS property. Army units will not leave sensitive items, classified media, or communications equipment in vehicles at the overflow parking lot. The TFC will notify the Savannah River Site Operations Center (SRSOC) if vehicles will be left overnight in the overflow parking lot. Vehicles left overnight in the staging area(s) are the responsibility of the Army.

4.13 Military Vehicle Access Control and Inspection Process during scheduled Training Events
Unit tactical vehicles, GOVs, and personnel will be inspected in the 700 A-Area Overflow Vehicle Parking Lot or approved designated location(s), by a designated DOE representative (OSSES, WSI, etc). This includes the Nuclear Solution facility for rail off loading of Army equipment. Once the inspection process is complete, the Army unit will be escorted through site barricades to the unit training location(s) by FGRC-SR. Army units with temporary site badges are authorized access and egress for supply deliveries through authorized site barricades.

4.14 Army Aviation Access - Coordinating Instructions
The following coordinating instructions provide guidance to Army aviation for fixed wing and rotary wing aircraft.

4.14.1 Air Access for Army Aviation
NLT 60 days out, Army aviation units will request permission to enter SRS airspace for the purpose of military training, through the FGRC-TFC to DOE-SR.

Army aircraft (fixed and rotor wing) will enter SRS airspace through approved air corridors provided by the unit commander. Aircraft will avoid all restricted areas as marked on the 1:50,000 site military map. Army aircraft will only land on designated Landing Zones (LZs) and Drop Zones (DZs), or those areas agreed upon and approved by the TFC and DOE-SR. All roads meeting the safety requirements as a fixed or rotary LZ, in unrestricted areas, may be used for take-off and landing upon approval from DOE-SR.

Army aviation units will provide type of aircraft along with all aircraft mounted weapons on board at the time of access. See Appendix F., Unit Coordination Packet; for an example of Equipment List and Aviation Ammunition Clearance Form – Memorandum of Understanding (MOU) and SRS Overflight Request Form.

Total number of all Army personnel and aircraft that has accessed and landed on SRS, through approved flight corridors will be verified by the OIC. The TFC will conduct a random check of names each day using the flight manifest. The names of the soldiers will be used to log personnel into the Remote Worker system. Appendix K and L provide air corridors and routes for fixed and rotary wing aircraft.

4.14.2 Army Flight Manifests
Flight manifests of unit Personnel will be submitted through the TFC NLT 30 days prior to the start date of training. The Flight Manifest will contain the following information.

a. Full name
b. Last 4 of the SSN
c. Army unit to include component; Active, Reserve or National Guard
d. Security Clearance if applicable
e. Citizenship
f. Contractors provide name of contract they are employed by.

Under certain circumstances, such as aerial reconnaissance or site visits by Army helicopters, aircraft will land at pre-approved LZ locations on SRS to have names verified by a DOE representative as designated by Site security. Aircraft entering SRS on simulated tactical / combat insertion exercises will have direct access, once DOE-SR approves flight manifests.

4.14.3 Aviation Communications with SRSOC
The lead inbound Pilot / aircraft of the Army Aviation Unit(s) will contact the SRSOC on the following frequency and call sign:

The lead pilot will inform SRSOC with the total number and type of aircraft prior to accessing SRS. All Pilots are required to render position reports to the SRSOC every fifteen (15) minutes while in flight over SRS.

4.14.4 Use of Aviation for Site Visits, Tours, and Reconnaissance
Army Aviation units are authorized use of aircraft for the purpose of Site Visits and will be coordinated through the TFC and DOE-SR POC. Prior to all site visits, tours, and reconnaissance missions, an Aircraft Over-flight Request Form must be submitted.

4.15 Parachute Entry
Utilizing approved flight corridors and designated Drop Zones (DZs), or other areas as approved and agreed upon by the TFC and DOE-SR, soldiers may exit from military aircraft by parachute over SRS. This includes High Altitude Low Opening and Low Altitude Low Opening Jumps (HALO/LALO).
Prior to access by parachute, the OIC will provide the TFC a manifest with the total number of personnel that will land on SRS. Once parachutists have landed, the OIC or RSO will verify to the TFC the accuracy of the manifest. These numbers will be used for Remote Worker purposes by the Army. Military Free-Fall Operations (MFF) operations include High Altitude High Opening Training (HAHO) and High Altitude Low Opening (HALO) operations on small drop zones, no larger than 350 meters in diameter.

4.16 Water Access – Coordinating Instructions (Surface and Sub-surface)
Army units may access SRS lands by water from the Savannah River at any pre-approved location including the Boat Ramp in D-Area. Army units will schedule and document water access and egress

locations and the specific means of access, i.e., Self-contained Underwater Breathing Apparatus (SCUBA) or type of military water craft through the 90, 60, 30 day coordination process.

Prior to ingress by water, the OIC will provide the TFC a manifest with the total number of personnel that will access the Site. Once the personnel have accessed SRS, the OIC or RSO will verify to the TFC the accuracy of the manifest. These numbers will be used for Remote Worker purposes by the Army.

Security of watercraft and other equipment left at the initial access location is the responsibility of the unit. The TFC will ensure Army SCUBA units have a FGRC Motorola Radio provided to the OIC, prior to the unit OIC accessing SRS.

4.17 Rail Access Control

It is anticipated that at times the Military will transport vehicles and equipment to SRS utilizing the public railroad running though the Site. This equipment will be off-loaded at the Energy Solutions facility in Snelling, S.C. The equipment and rail cars may be temporarily staged on Site until offload can commence. This section of rail is managed by Energy Solutions. Once offloaded, the Army's equipment will be inspected for contraband by a DOE-SR Security representative and Army personnel accessing SRS by rail will be verified at this time. Once all personnel and equipment is cleared, the Army unit will conduct a vehicle convoy from the Energy Solutions facility through an SRS perimeter gate. The FGRC-TFC will coordinate access to Energy Solutions for DOE-SR employees (OSSES / WSI / etc.) as required.

If off-loading is conducted on SRS, the offloading would be conducted at the Dunbarton Railroad Yard. Any special conditions for the use of this area will be assessed during the 90, 60, 30 day planning and approval process described in Section 3.

Chapter 5
General Use, Control, and Coordination of Training Areas and Facilities

5.1 General

5.1.1 Maneuver Training Areas and Facilities
The term "Maneuver" includes Army ground, water, and aircraft operations. This chapter identifies specific control measures to reduce interference with SRS operations. These controls will allow the Army to conduct training in a realistic combat environment.

5.1.2 Composite Risk Management (CRM)
Army Units will submit a DA-Form 7566-R, Composite Risk Assessment Form (Appendix N) when scheduling any facilities or training area. Training events with a low assessment may be signed by the company/troop commander (O-3). Training events assessed as moderate or using training ammunition ("HOT" status) must be signed by the Battalion Commander (O-5) or authorized representative. High Risk training will be signed by the Brigade / Regimental Commander or their designated representative.

5.1.3 Facility and Training Area Cancellations (DOE and Army)
The TFC will be contacted immediately of all facility and training area cancellations initiated either by DOE-SR or by the training unit. The TFC, through DOE-SR POC, will notify all Savannah River tenant organizations immediately. Refunds of support costs to the unit will be initiated by the DOE-SR Contracts Management Division IAW the provisions specified in Appendix I.

5.1.4 Interaction with SRS Tenant Organizations
While DOE-SR may periodically approve specific exceptions for safety and operational security reasons, for the most part SRS will continue their normal schedules and activities during military training exercises and will not be excluded from training areas. As a result of this intended co-utilization of SRS lands there will likely be inadvertent interaction between Army and SRS personnel (ie., road maintenance, security, and forestry operations, etc.). In the course of such contacts, Army units will provide the right-of-way for SRS vehicles and pedestrian traffic. Army units will not impede or interfere with normal SRS operations. In addition to the coordination requirements in section 3, the TFC will provide information on training locations and potential interactions from the scheduled Army activities as appropriate. If Army personnel are stopped and challenged by any SRS employee, the senior ranking soldier will render appropriate military identification and contact their OIC or RSO immediately. The OIC will then contact FGRC-SRS using the Land Motorola Radio (LMR) or cell phone explaining the situation. All training will stop until the situation is cleared.

5.1.5 Facility and Training Area Reconnaissance
Army units will coordinate reconnaissance of facilities and training areas through the Fort Gordon Range Control-Training Facility Coordinator (TFC). Units will be escorted on all scheduled reconnaissance of facilities by the TFC. Refer to Chapters 3 and 4 for additional information on badge and access requirements. Further questions on access control and badge requirements will be addressed through the TFC.

5.1.6 Pre-Occupation Inspection of Facilities and Training Lands
Prior to the military occupying facilities/areas scheduled for training, the TFC will inspect all them for pre-existing conditions of potential concern and notify the DOE-SR POC to verify/resolve issues as needed.

5.1.7 Occupation of Facilities and Training Lands
To ensure accountability of all Army personnel for remote worker purposes, the OIC and or the RSO of each Army unit must occupy each facility or training area daily through Fort Gordon Range Control – Savannah River Site (FGRC-SRS) Operations using the FGRC-SRS Facility and Training Area Occupation Checklist (Appendix B). One week prior to occupation of training areas, the TFC will coordinate with the Savannah River Site Operations Center (SRSOC) to verify: training locations / quadrants are understood; appropriate site notifications are developed; and the training plan is

understood. While a unit is in a training status, the TFC will provide daily notification to the DOE-POC of any significant changes.

5.1.8 Daily Inspection of Facilities and Training Lands
Training lands and facilities that are occupied by Army units shall be inspected by the FGRC-SRS on a daily basis. The Training Area and Facility Occupation Checklist (Appendix B) serves as the basis for the inspection process. If time and circumstance permit, the OIC or RSO will accompany FGRC-SRS during the inspection.

5.1.9 Maneuver Damage
Maneuver damage caused by the using Army unit to the terrain or natural environment as well as man made structures or facilities such as highways, road surfaces, buildings, etc., will be reported to the FGRC-SRS Operations immediately. The FGRC-SRS Operations will, in turn, report it to the DOE-SR POC. Ruts, tire trenches, and other maneuver damage will be fixed by the unit prior to final clearance. Dirt and debris left on road surfaces after road crossing operations will be swept immediately by the unit. Units will be prepared to provide the cost of repairs that may require heavy equipment or that were not properly corrected. Units will be granted the opportunity to repair damage, or provide for its repair, as the first course of action prior to any charges being assessed.

5.1.10 Clearance of Facilities and Training Lands
Three (3) days prior to a units last day of training, the FGRC-SRS will initiate clearance processes. Clearance involves inspection of training areas and facilities for the presence of maneuver damage and/or approval of completed remediation actions. The FGRC-SRS will coordinate the inspection schedule with the DOE-SR POC. The DOE-SR POC will determine if DOE-SR representatives will participate in the inspections or if follow-up spot checks will be performed by DOE-SR personnel. The TFC will notify the DOE-SR POC each day of any damage or concerns. The DOE-SR POC will coordinate the guidance and approval of proposed remediation actions as needed with DOE-SR organizations. Army Units shall remediate any damages identified prior to departure and/or be prepared to return to SRS after their departure if additional policing or repair of training lands is needed. DOE-SR makes the final determination that mitigation of any damage is complete and adequate.

IAW the JSOP, training will not be conducted on remediated CERCLA Units. If by chance there is some inadvertent damage to a CERCLA remediation or monitoring system, the TFC will notify the DOE-SR POC. DOE-SR will contact the EPA and SCDHEC to alert them of the nature and extent of the damage as well as the remedial action to be taken.

5.1.11 Forward Arming and Refueling (FARP) Locations
Units will request FARP locations for their training events through the 90,60,30 day planning and approval process.

5.1.12 Sanitary Waste Disposal
All sanitary waste, to include card board, paper, mess hall waste, etc., will be disposed of daily in designated dumpsters at approved locations or as otherwise stipulated in the approved training plan. Soldiers in a tactical environment will not bury, burn, or dispose of trash in any other way.

All trash will be secured in plastic bags and given to unit supply technicians for disposal. Trash bags will not be left unattended because of the abundance of wildlife. Battalion and brigade size units may coordinate for disposal of sanitary waste with SRNS, with the Three Rivers Land Fill off Highway 125 near D-Area, or other sources. Army units will not store trash overnight in tactical vehicles. See chapter 8, for additional information.

5.1.13 Field Sanitation and Latrines
Units will utilize Port-a-lets at each Training Area and facility. Units will not dig field latrines or use the open woods and forests for latrine purposes. Black water (port-a-lets) would be collected and transported either off site or to the SRS Sanitary Waste Water Treatment Facility (SWWTF) for treatment and disposition.

Field kitchens and hand washing stations may be established by the unit. The resultant grey water (Hand Washing Stations, Kitchen Water) will be disposed of as stipulated in an approved training plan as developed during the 90, 60, 30 day planning and approval process. See section 8.36 for information on grey water disposal policies.

5.1.14 Obstacles
Emplacement of obstacles such concertina wire, barbed wire, and surface inert minefields is authorized. Specific obstacle plans (OPLANS) should be included in the 90, 60, 30 day planning and approval process. Obstacles shall be retrieved at the conclusion of training.

5.1.15 Digging
Digging of obstacles is unauthorized, unless specifically approved by DOE-SR at designated dig sites specified in the training plan developed through the 90, 60, 30 day approval process. Also reference **section 8.34**

5.1.16 Camouflage
Units will not use natural vegetation for the purpose of camouflage. Units are authorized the use of camouflage nets and other man-made systems for camouflage.

5.1.17 Water Requirements
The Army will have access to potable water locations as required for basic life support functions.

5.1.18 Potable Water Locations
Potable water locations are in N-Area, B-Area, D-Area, and Forestry.

N-Area: The TFC will initially escort the unit S-4 (Logistics Coordinator), unit supply technician, or designated unit representative on the most direct route to the N-Area potable water point. Once the unit understands the route into N-Area, the unit will have unrestricted access to the potable water point. The TFC will provide notification through the 60 and 30 day coordination process of units anticipating potable water support. B-Area: This potable water location will only be used for emergency purposes for units to re-supply water. The FGRC-SR will escort units into and out of B-Area.

Domestic Water Flush Hydrants: Units will be issued a Hydrant Spanner Wrench and 2.5 Inch, fire hose thread hose in order to access a domestic water flush hydrant. The TFC and or FGRC-SR personnel will provide instruction on proper use the wrench and hose. Blue hydrants locations will be provided as required prior to each training event. See attached aerial strip map in Appendix M, Domestic Water Flush Hydrants.

5.1.19 Non-Potable Water
Other than potable water locations stated above, all other external water points are classified as non-potable water locations and will not be used by Army units for human consumption. Non-potable water points may be used as provided in the approved training plan.

5.2 Dismounted Operations and Procedure

5.2.1 Tactical Training
Tactical dismounted operations using blank ammunition and pyrotechnics is authorized in approved training areas and facilities, day and night. Examples include Reconnaissance, Land Navigation, Force-on-Force Exercises using Multiple Integrated Laser Engagements Systems (MILES), etc. Specific details of the dismounted operations and training for an exercise will be developed between DOE-SR and the FGRC-TFC through the 90,60,30 day process. Units may cross uncontaminated streams to navigate to other training areas subject to the stipulations in the approved training plan.

5.2.2 Dismounted Night Operations
Soldiers conducting dismounted night operations and tactical training will have sufficient capability to provide illumination for emergency situations. At a minimum, units will supplement night operations with sufficient Combat Life Saver (CLS). Night vision goggles will be used to the fullest extent possible.

5.2.3 Facility and Building Usage (CQB / Room Clearing)
Units will request facilities and buildings designated for use by the Army during the 90,60,30 day process.

5.3 Mounted Tactical Operations

5.3.1 Tactical Wheeled Vehicle Training
Tactical wheeled vehicle training is limited to those areas approved by DOE-SR and the TFC during the 90,60,30 day process. Examples of Tactical wheeled vehicle training may include but is not limited to:

- Improvised Explosive Device (IED) Training.
- Convoy Operations.
- MILES training.
- Tactical Operations Center (TOC) Operations.

Tactical wheeled vehicles may conduct off road training as stipulated in an approved training plan. Stream crossings by wheeled vehicles will only take place on bridges.

5.3.2 Vehicle Speed limits
Off Road: Speed is limited to 15 MPH unless dictated by terrain, troop presence, weather, or other speed limiting conditions. Highways and Secondary Roads: TMP Vans and Sedans will obey posted speed limit signs. The tactical vehicle speed limit is 45 MPH Highways and 35 MPH on Secondary Roads. Convoys will adjust speed accordingly to maintain unit integrity. Tactical vehicles will not increase speed to close the distance with front vehicles in the convoy. The convoy commander is responsible for maintaining the integrity of the convoy, to include straggler control, on SRS.

5.3.3 Vehicle Night Operations
Blackout Drive and or Markers may be used in conjunction with night operations, off road only. At a minimum, operators / drivers of tactical vehicles in blackout drive or blackout marker conditions must wear Night Vision Goggles (NVGs) at all times. NVGs will not be worn when momentarily crossing roads from one training area to another, or to cross major SRS public roads. Head lights (White Light) will be turned on when crossing roads at night. Unit SOPs for the use of NVGs is authorized when conducting night operations, as long as they do not interfere with SRS operations and public safety.

5.3.4 Disabled Military Vehicles
If a Military Vehicles becomes disabled on a SRS highway or secondary road, it will be moved safely off to the side of the road with vehicle warning flashers activated. Appropriate vehicle warning signs should be placed front and rear of the disabled vehicle if available. If safe to do so, road guides will be posted in safe locations to alert oncoming traffic. FGRC-SRS Operations will be notified immediately of all disabled vehicles. FGRC-SRS will notify SRSOC if DOE-SR Fire Department or other emergency services is requested. If possible, the vehicle should be moved to the 700-A overflow parking lot if repair or removal from the Site is expected to involve an extended period.

5.3.5 Wheeled Vehicle Environmental Controls
All Army tactical vehicles, to include generators and air conditioning units, will use drips pans and wheel chalks as required. Government vans and sedans are exempt. Unit Maintenance Collection Points (UMCPs) and Logistics Collection Points (LCPs) are authorized upon approval from the FGRC-TFC and DOE-SR. Units will implement controls to prohibit the unauthorized release of hazardous material, POL products (Petroleum, Oils, and Lubricants) into the environment.

5.3.6 Vehicle Accidents
See Chapter 7; Emergency Services reference to accidents involving military vehicles.

5.3.7 Vehicle Refueling
Vehicle refueling is authorized from vehicle fuel trucks or similar fuel dispensing equipment. Army units will attempt to consolidate refueling operations at designated locations. Tactical Refuel on the Move (ROM) operations is authorized upon approval by DOE-SR and the TFC. Military fuel trucks and blivets will use catch basins, grounding rods, PPE, and fire extinguishers when refueling. Refueling operations will not take place within 200 feet of Wetlands, Groundwater wells, Monitoring wells, Production Wells, Protected Species, or environmentally controlled areas and locations.

5.3.8 Vehicle Fuel Spills
See Chapter 8, Environmental Compliance, Protection, and Consideration reference to vehicle fuel spills.

5.4 Waterborne Operations

5.4.1 Savannah River Use
Tactical waterborne operations are limited to areas of the Savannah River as specified on the Training Area Planning Map or as stipulated in an approved training plan. Also see Access Controls for waterborne units in Chapter 4. The TFC will coordinate with DOE-SR, the Georgia and South Carolina Departments of Natural Resources, the United States Forest Service-SR (USFS-SR), and Plant Vogtle prior to commencement of Army training utilizing the Savannah River. Unless specifically provided in an approved training plan, tactical waterborne operations are not authorized on SRS lakes.

5.4.2 Self-contained, Under Water, Breathing Apparatus (SCUBA) Training
SCUBA access/egress and training is authorized on areas of the Savannah River under the provisions in **section 5.4.1** above.

5.4.3 Army Water Craft
Under the provisions in **section 5.4.1** above, Army Water Craft may utilize the Savannah River for training and the Site boat doc/ramp for access and egress. Army Water Craft will comply with all United States Coast Guard safety procedures while navigating on the Savannah River. All Army water craft will have sufficient personal floatation devices, appropriate navigational lighting, first aid kits, and fire extinguishers.

5.4.4 Night Operations
Army Military Water Craft will display and illuminate appropriate navigational devices while training on the Savannah River. Blackout operations shall be approved through the TFC and DOE-SR. Military water craft will not interfere with SRS, Local, State, and Federal activities while navigating on the Savannah River. Military water craft and soldiers training on these locations will not interfere with civilian or commercial vessels navigating on the river.

5.5 Aviation Operations

5.5.1 Fixed and Rotary Wing
Military Aircraft, both fixed wing and rotary wing, are authorized to fly through SRS airspace in specific air corridors as approved by the FGRC-TFC through DOE-SR.

5.5.2 Aviation Communications with SRSOC
Prior to accessing SRS boundaries, the lead pilot of the Army Aviation Unit will contact the Savannah [redacted] board. All Pilots are required to render position reports to the SRSOC every fifteen (15) minutes while in flight. In addition, Army Helicopter Aviation units physically located on SRS will conduct radio checks with WSI-SRSOC during the 0600 and 1830 hour shift change as well. The TFC will telephonically contact SRSOC prior to initiating aviation radio checks to ensure the net is clear.

5.5.3 Aviation Air Corridors

5.5.3.1 Fixed Wing

The current fixed wing Drop Zone for SRS is located [redacted]. This DZ is situated well away from populated areas and SRS industrial areas. The Primary approach is from the south east to the northwest. However, aircraft may approach from the northwest to south east if conditions warrant. Recommend Aircraft maintain a minimum altitude of 4000 feet, AGL, until at least 6 miles from the DZ. [redacted].

Fixed wing aircraft may access other areas of SRS upon approval of DOE-SR. See Appendix L., Fixed Wing Air Corridors.

5.5.3.2 Rotary Wing (Helicopter)

Army Heliborne units will only use approved air corridors when accessing SRS. See attached helicopter corridors map in Appendix K. Heliborne units accessing SRS will follow the approved routes to ingress and egress SRS. During access of SRS, aircraft will followed the approved route in a approved formation until the aircraft formation reaches a location along the route near their proposed landing zone at which time the formation of aircraft may exit the route and land on their approved LZ(s). Once the mission is complete the formation of aircraft will take off and follow the approved air corridor to the next LZ, or, egress SRS.

The following are the Military Grid Reference System (MGRS) and EOC Grid Coordinates for each of the three routes.

[redacted]

Heliborne units may access each route in either direction. Inbound aircraft will maintain an altitude of at least 3500 feet above ground level (AGL) until they have crossed the SRS boundary. Once aircraft enter SRS, they will follow their proposed route as outlined in the Aircraft Overflight Request Form in accordance with the unit training mission.

The Army unit is responsible for filing a flight path with the FAA and local airports.
Army units will submit a SRS Aircraft Overflight Request form (Appendix D) as part of their request.

5.5.4 Specific Flight Operations Rules, Restrictions, and Training. Altitude Considerations – Routine Training and Operations

5.5.4.1 Daylight Operations

Army aircraft shall maintain a minimum altitude of 200 feet above any known obstacle within 500 feet either side of the planned route of flight and 300 feet above ground level at all times during daylight operations except for takeoff, approach, and landing.

5.5.4.2 Night Operations

Except for takeoff, approach, and landing, Army aircraft shall maintain a minimum altitude of 500 feet above ground level or 200 feet above the highest obstacle within 1,000 feet either side of the planned flight route, whichever is higher.

5.5.4.3 Night-Vision Goggle Operations (extract from the Savannah River Site Aviation Management and Safety Program Manual; SRM 440.2.1E) Modified for Army Aviation
When using night-vision goggles, Army aircraft shall maintain a minimum altitude of 300 feet above ground level or 200 feet above the highest obstacle within 1,000 feet of the planned route of flight, whichever is higher. The current revision is E.

Night-Vision Goggle operation, maintenance, testing, and calibration of night vision goggles used by Army flight crews and designated aircrew members shall conform to FAA and/or U.S. Army procedures and specifications.

In all stages of night-vision goggle training and use, two Army pilots are required. Army pilots using night-vision goggles shall be FAA instrument rated in their current position.

Army Pilots are required to follow specified procedures in using night-vision goggles, including procedures contained in the manufacturer's operations manual.

Night-vision goggle Preventive Maintenance Checks and Services (PMCS) shall be accomplished prior to official sunset. These checks shall be verified by the Commander of the unit, lead pilot, and pilot of each aircraft.

Each Army pilot is responsible for ensuring their aircrew's night-vision goggles are checked in accordance with the provided checklist. Crew use of night-vision goggles shall optimize 360° observation from the aircraft.

Army aircraft that are used for night-vision goggle flights shall have, at a minimum, the following standard night-vision goggle equipment:

(1) Night-vision goggle-compatible cockpit, and
(2) Night-vision goggle compatible digital/analog radar altimeter with visual and audible warnings.

5.5.4.4 Hazard Mapping
Each Army aircraft shall be equipped with a map displaying all identifiable hazards for flight within the operating area. A map displaying all identifiable hazards to flight and depicting elevation above ground level will be conspicuously posted in the Unit TOC / Command Post.

Army aircraft maps and mission planning area maps shall be reviewed for currency at least every 30 days and marked with the current date.

5.5.4.5 Terrain Flight (Contour, Low-Level and Nap of the Earth)
There are three modes of terrain flight: contour, low level, and nap of the earth. Terrain flight is flight at 200 feet or less above the highest obstacle on the intended flight path. Low-level or contour flight may provide a tactical advantage for aircraft. Nap-of-the-earth training must be approved by the DOE-SR.

Contour flight conforms to the contours of the earth and is characterized by varying airspeeds and altitudes. Contour flight altitudes are not less than 25 feet above the highest obstacle.

Low-level flight is not less than 100 feet above the highest obstacle. It is conducted at a selected altitude and generally conforms to a predetermined course with constant airspeed.

Nap-of-the-earth flight, which shall be approved by the DOE-SR, is characterized by maneuvers as close to the earth's surface as vegetation, obstacles, or ambient light will permit.

5.5.4.6 Training Route(s)/Areas
Low-level and contour flight for training will be conducted only over approved training routes, in designated training areas approved by the DOE-SR.

A low-level flight route/area for training will be approved by the DOE-SR. The training route(s)/area shall be clear of hazardous obstacles.

All training route(s)/area(s) shall be clearly marked on each aircraft map and mission-planning map. A master map showing all hazards to flight shall be conspicuously displayed for the flight crew's use.

5.5.5 Special Use Air (SUA) Space
Special Use Air (SUA) for SRS may include but is not limited to unmanned aerial vehicles (UAVs), special communications systems, and airborne operations. All flight corridors for each training event will be approved 30 days in advance by the DOE-SR, through the TFC.

5.5.6 Landing Zones (LZs), Drop Zones (DZs), Pickup Zones (PZs)
Rotary-wing aircraft may land at approved LZ/DZs/PZs throughout SRS as designated on the military training map. Units requesting to use LZs/DZs/PZs other than specifically approved sites must receive approval from the Fort Gordon Range Control – Training Facility Coordinator and DOE-SR. All flight routes and corridors will be addressed during the 90,60,30 day process. Routes and corridors should be locked in at 30 days. No changes to routes or corridors will be made within 15 days prior to the beginning of the Army training event. (Exception: Aviation operations may be cancelled due to weather conditions.)

5.5.7 Coordination with Local Airfields
It will be the unit's responsibility to coordinate all flight plans with any agency or organization outside of SRS.

5.5.8 Aerial Delivery Systems (Cargo)
Aerial delivery of cargo on specified drop zones (DZs) is authorized upon approval of DOE-SR. These training requirements must meet the 90, 60, and 30 day scheduling requirements. Units shall submit a DOE Overflight request form for approval (Appendix D). Fixed and rotary aircraft are authorized delivery platforms.

Chapter 6
Communications

6.1 Special Army Communications Training Events

Electronic Jamming Operations are not authorized on SRS. However, upon approval by DOE-SR through the 90, 60, 30 day process, Army units may conduct special communications training events. Special Army communications training events will not interfere with SRS air, ground, or water operations. The Army will provide information on any hazards associated with the special communication event to DOE-SR including safety zones that would restrict access of SRS personnel during the communication hazard. DOE-SR would take responsibility to restrict access of its aircraft over Army Communication Hazards. The Army will cease Special Communication events if notified that they are interfering with SRS communications, aircraft, and or operations of SRS.

6.2 External Communications

6.2.1 FGRC HQ Communications

Primary communication with FGRC HQs, FRGC-SRS, and SRSOC is the cell phone. FGRC HQs, Ft. Gordon, will not contact SRSOC unless there is an emergency. FGRC-SRS will maintain two radios on SRSOC frequency at all times to ensure Site Emergency "All Call" radio transmissions are received in a timely manner.

6.2.2 Public Communications

FGRC-SRS will coordinate with DOE-SR Office of External Affairs (OEA) all external communications about Army units training at SRS. FGRC-SRS will utilize the Communication Plan as stipulated in Appendix S for notifying elected officials, community leaders, the general public and the media for training events at SRS.

In the event there is an emergency that pertains to Army training activities on SRS, the TFC will contact the DOE-POC at the first available moment. The DOE-POC will contact OEA to determine if the emergency warrants media notification. If so, the OEA, the DOE-POC, and the TFC will develop the best course of action and message to provide to the media.

6.3 Site Internal Communications

6.3.1 General Site Notification of Army Activities

SRSOC will provide daily public address (PA) announcements for on site Army training exercises, including grid coordinates, so site personal are aware of potential interactions. As SRS remote workers call into the SRSOC, they will be informed of Army activities and the specific coordinates.

6.3.2 Emergency Notifications and Communications

SRSOC will communicate with FGRC-SRS only in situations involving Site Emergencies and for the purpose of daily radio checks. SRSOC will alert FGRC-SRS and Army Units of all Site Emergencies by activating the "All Call" System from SRSOC by radio and activation of the Remote Worker Paging system. The "All Call" system will provide the FGRC-SRS with evacuation instructions. The FGRC-SRS will contact units in remote areas to confirm notification and evacuation requirements have been received. The FGRC-SRS is responsible for ensuring units account for their personnel and follow required evacuation and accountability instructions from SRSOC. The OIC is responsible for notifying all soldiers when an Emergency Notification is initiated by SRSOC. The OIC will immediately cease all training events and follow all emergency procedures as prescribed by SRSOC.

6.3.3 Units in Training Status

Units in a training status shall maintain communication capability at all times with SRSOC and/or FGRC utilizing hand held Land Motorola Radios (LMR). Army units will not use the LMR to conduct personal business. Rather they will use them only to conduct radio checks and emergency response. FGRC-SRS and Army Unit radios will not have SRS security response frequencies. The FGRC-SRS will maintain

mobile radio capability at all times during training exercises but will only staff personnel at night when units are physically conducting night operations.

6.3.4 Officers-in-Charge (OICs)
While in a training status on Site, OICs must have required radio and alpha/numeric pager in their possession at all times. OICs are required to conduct daily radio checks with the SRSOC and FGRC-SRS at 0600 hours and 1800 hours. Other than the two authorized radio checks, the OIC is not authorized to communicate with SRSOC unless an emergency arises and FGRC-SRS cannot be contact. The OIC is responsible for ensuring he receives a test message on his Remote Worker Pager daily. If a test page is not received, the OIC will contact FGRC-SRS immediately.

6.3.5 FGRC-SRS Forward Operations
FGRC-SRS forward operations will be operated from FGRC vehicles.

6.4 Communication Equipment

6.4.1 Equipment Requirements
All units conducting training at SRS are required to have a communication package consisting of a Remote Worker (RW) alpha/numeric pager, a cell phone, and a Handheld Radio (LMR). The TFC is responsible for issuing training units with a RW alpha/numeric pager, a Handheld Radio (LMR), spare batteries, and a charger prior to occupation of SRS training facilities. The TFC will change out batteries for those units unable to charge their own radios. The TFC is responsible for ensuring FGRC-SRS staff and Army Unit Officers in Charge (OICs) are thoroughly familiar with the operation of the issued LMR, associated frequencies, and Site Emergency procedures. The unit is responsible for the cell phone requirements.

6.4.2 SINCGARS Radio Systems
Handheld types of SINGARS Radios (or similar radio net) may be used by Army units on Site for internal communication during military training events. Internal SINCGAR radio frequencies, SOPs, brevity codes, and classified secure radio systems are authorized only in training areas and facilities. Loss of Army classified media or radio systems will be reported to FGRC-SRS immediately.

6.4.3 Quarterly Communications Test
SRSOC will conduct a quarterly communications test with the Army to validate the RW equipment (site radio, RW alpha/numeric pager, and cell phones).

6.4.4 Radio Checks
FGRC-SRS will conduct daily Radio Checks with the Savannah River Site Operations Center (SRSOC) during their morning and evening shift change at 0600 hours and 1830 hours on the SRSOC channel. FGRC-SRS will contact SRSOC by telephone prior to initiating any Radio Checks to ensure the Radio net is clear. FGRC-SRS will not interrupt SRSOC or other SRS tenant radio traffic unless there is an emergency requiring SRSOC support. FGRC-SRS is responsible for monitoring the SRSOC frequency at all times while Army units are physically located on SRS in a training status. Army Aviation radio checks will be as stipulated in section **5.5.2.**

6.4.5 Army Radio Frequencies and Settings (FGRC-SRS)

[redacted]

6.4.6 Handheld Radios Issued to Army Training Units

[redacted]

6.4.7 Specific User Call Signs

User	User Call Signs
[redacted]	

Unit Call Signs will be provided to SRSOC during initial coordination by the TFC.

6.4.8 Radio Trouble Shooting

The LMR provides specific tones and sounds to alert the user of potential malfunction and transmission problems. Provided are two of the most common tones encountered by users.

a. Constant Tone: A constant tone may be encountered when push-to-talk is pressed. This is caused by loss of radio reception in remote areas or radio is deep inside a large facility.
   How to Correct: If outside, move radio to higher terrain or elevation. If inside a facility, go outside.

b. Two chirps: Battery Low.
   How to Correct: Replace battery with a fully charged battery. Immediately place low charge battery on an authorized charger.

c. Radio will not turn on: The most likely problem is the battery is dead.
   How to correct: Replace battery. If this does not correct the problem, replace the radio.

6.5 Remote Worker Communication

6.5.1 Remote Worker Activation

All Army personnel (including FGRC personnel) conducting activities in remote areas of SRS shall be activated into the SRS Remote Worker (RW) Program prior to arriving at a remote location and for the duration of their time in the remote location. Activation is triggered by notifying the SRSOC Remote Worker office. Information to be provided during the notification includes the specific location, personnel strength, and radio call signs. Army RWs will notify their dispatcher anytime the remote work grid location changes, and upon completion of work and return from the field. Driving through the site does not require being logged into the Remote Worker Program.

6.5.2 RW Communication Equipment

Remote workers (or groups of workers) must have the required communication package (section **6.4.1**) in their possession at all times. Only one communication package is required for grouped workers as long as all in the group can hear and respond to instructions issued by the individual carrying the RW pager, phone, and radio. Once emergency information is received, all advisories or warnings shall be relayed to all personnel within the group. Remote Workers may receive text messages on the pager for the following reasons:

- United States Forest Service, Prescribed Burns.
- Scheduled Deer Hunts.
- Severe Weather Advisories.
- Site Emergency Announcements.
- Road Closures.

6.5.3 Unit Pre Training Notification for Remote Worker (RW) Program:
At least one week prior to military training, the TFC will provide SRSOC and the Remote Worker office a list of following:

- SRS Grid locations for military training locations per each day.
- Aircraft frequencies.
- Unit call signs.
- OIC / RSO Name and location.
- Total number of Army personnel, aircraft, and vehicles on SRS.
- Primary and Alternate Cell phone contact numbers.

This information is provided to SRSOC and the Remote Worker Program to provide a general overview of each Army training event and is not to be used to activate Army personnel into the Remote Worker Program. SRSOC may use this information for internal coordination purposes.

6.5.4 Unit Training Notification Process for Remote Worker (RW) Program:
At the beginning of each training exercise to be conducted in a remote location, the TFC will ensure that the OIC of the unit and all associated personnel, to include FRGC-SRS staff, are activated into the Remote Worker System for the training period by providing the following information to their dispatcher:

1. Name (team lead) and number of personnel deployed with the group.
2. S~~u~~pervising organization.
3. EOC grid location of remote work.
4. Estimated duration of time at that grid number location.
5. Means of communication (i.e., radio frequency available, alpha/numeric pager and cellular telephone number).
6. Number of vehicles.
7. End user (alternate contact person) to be called if Army RWs fail to report leaving the remote worksite for the day or there is no response from Army RWs.

The OIC is responsible to account for additions and deletions of RWs in their party after the team is dispatched to the remote area. The OIC will notify the TFC: anytime the remote work grid location changes; there are additions or deletions of RWs in their party; of completion of work and return from the field for the day. The TFC will in turn, notify the Remote Worker Office. For each day of the training exercise thereafter, the TFC will continue to update the Remote Worker Office accordingly.

The TFC will provide radios and pagers to the unit as required to facilitate proper RW procedures.
Remote Worker pagers will be in the possession of the OIC and appropriate FGRC-SRS Staff at all times. The OIC is responsible for monitoring the Remote Worker Pager at all times. OICs will not delegate responsibility to monitor the Pager. Once emergency information is received by FRGC-SRS or the OIC, all advisories or warnings shall be relayed to all personnel within the group.

Chapter 7
Site Emergencies and Emergency Services

7.1 Site Emergencies

Site emergencies may involve industrial, security, fire, weather, or other events requiring immediate notification to military units. In the case of a Site Emergency, SRSOC will activate the "All Call" system with detailed instructions by radio and also by activating the Remote Worker Paging System (also see chapter 6). All Army Units will immediately cease training and standby for instructions. It is the responsibility of FGRC-SRS to account for all FGRC-SRS personnel and soldiers to ensure emergency instructions and or evacuation instructions have been met. The FGRC-TFC will notify SRSOC once all instructions have been met. Training will not continue until an "all clear" has been given by SRSOC.

7.2 Requests for Emergency Response Assistance to Military Units on SRS

Military units in emergency situations involving saving lives or property belonging to the Army may request support from the Savannah River Site's Fire Department (SRSFD), Law Enforcement (LE), or Emergency Medical Services (EMS). Such requests shall be made by the FGRC-SRS through the SRSOC. FGRC-SRS Operations personnel may respond to the scene and act as First Responders if safe to do so until the SRS responder arrives. At that point the FGRC-SRS shall cease actions other than those specifically requested by SRS on scene emergency personnel. The FGRC-SRS may assist in guiding SRSFD, EMS, and LE to remote training locations upon request. The DOE-POC will be notified as soon as reasonably practical.

7.3 Army response to Emergency Situations involving SRS Personnel

Army units are authorized to provide first responder aid in situations where soldiers come across situations involving SRS employees who require immediate assistance in fire or medical emergencies in order to save lives, property, or to prevent injury. In all cases, the unit will contact FGRC-SRS personnel by radio or telephone to report the emergency. Units unable to contact FRGC-SRS may contact SRSOC on [redacted]

7.4 Accident Investigation and Reporting

In the case of an accident that is associated with military training on the Site, including those that also involve Site personnel and property, the military shall be responsible for the accident investigation and reporting activities utilizing military protocols and procedures. The Army shall provide timely notification to the DOE POC and the SRSOC of any accidents to ensure the Site remains informed as to the nature and extent of such incidents. Upon completion of the investigation the Army shall furnish DOE with the results, to include any written reports. Utilization of the DOE Occurrence Report and Processing System (ORPS) will not be required unless the facts, as described in the Army's report, indicate there is reason to inquire further with regard to any possible DOE action/inaction related to the incident.

7.5 DOE Occurrence Reporting and Processing System (ORPS)

Since the ARMY will perform a similar and very rigorous process, ORPS reporting is not required for incidences associated with military training activities on the Site, including those in which Site personnel may be affected, other than as specified in section 7.4. Rather, the military shall be responsible for investigation and reporting activities utilizing military protocols and procedures. As stipulated in section 7.4, upon completion of the investigation, the Army shall furnish DOE with the results. Should the facts as described by the Army indicate that there is reason to inquire further with regard to possible DOE action/inaction and an ORPS report would be appropriate under the circumstances, the DOE POC, in consultation with the Office of Safety and Quality Assurance as well as the Office of the Chief Counsel, will be responsible for initiating the ORPS reporting protocol by contacting the appropriate SRNS POC.

7.6 Fire Prevention and Reporting

7.6.1 Fire Danger Ratings

Army units will adhere to daily South Carolina Fire / Burn Categories. See Appendix C Fire Danger Ratings as it pertains to blank, pyro, and smoke use. Fort Gordon Range Control – Savannah River Site Staff (FGRC-SRS) will contact the United States Forest Service – Savannah River (USFS-SR) Fire

Dispatch desk for the daily Burn Category. [redacted]

7.6.2 First Response Actions
Units will provide pioneer tools consisting of at least 2 each of Shovels, Pick/Mattox, and Axe while in an occupied status on SRS. These pioneer tools are used to extinguish small manageable fires that may be encountered or caused due to use of blank ammunition, pyrotechnics, or other factors. Army units and FRGC-SRS will provide first response and attempt to extinguish fires, if safe to do so, until the fire is out or Savannah River Site fire response personnel arrive on the scene. Once SRS emergency responders are on the scene, the FGRC and training units will respond to all instructions from the SRS fire response personnel.

7.6.3 Fire Reporting
Units will immediately report all fires, regardless of size, to FGRC-SRS by Motorola Radio. The FGRC-SRS will immediately contact the Savannah River Site Operations Center (SRSOC) by Motorola Radio (LMR). Army Units unable to make contact with FGRC-SRS will immediately contact SRSOC by setting the handheld Motorola radio to channel 16, which is the pre-programmed SRSOC frequency. The OIC or Army leader may also call SRSOC with general information at [redacted] with the following general information:

1. SRS grid location or, military grid location of fire. (Wild Land, structure, vehicle).
2. Your name, rank, and position title.
3. If units cannot contact SRSOC, they will immediately report the fire to USFS-SRS Fire Dispatch at [redacted].

7.7 Law Enforcement

7.7.1 Jurisdiction
DOE-SR Law Enforcement (LE), (to include appropriate civilian law enforcement agencies) will exercise jurisdiction over the enforcement, and prosecution of criminal activity involving DOE-SR personnel and/ or property and Army units on any portion of SRS land. Military law enforcement may assist DOE-SR LE upon direct request from the DOE-Office of Safeguards, Security, and Emergency Services (DOE-OSSES). Military Law Enforcement is not authorized to patrol SRS lands other than those areas approved for training as shown on the 1:50,000 Scale SRS Training Areas Planning Map. DOE-SR will not become involved with internal unit criminal offenses that do not involve SRS employees or property. Army units observing criminal activity in progress will not attempt to apprehend suspects. Army units will contact the TFC or SRSOC to report all criminal activity.

7.7.2 Crime Scene Investigation
DOE-SR law enforcement will act as the lead investigative agency for crimes involving Army units and DOE-SR personnel and or property. Army units and military law enforcement (if applicable), will cooperate with DOE-SR law enforcement to investigate, issue appropriate citations, and prosecute criminal activity.

Military law enforcement will act as the lead investigative agency for crimes that occur on SRS land involving only the Army and not SRS personnel or property. As a matter of courtesy, the Army will notify the DOE-POC of all Military specific criminal activity that has occurred on SRS.

Military Law Enforcement / Investigators are prohibited from entering SRS Restricted Areas or Industrial Complexes for investigative purposes without first meeting the following criteria:

- Access specifically requested and approved by DOE-OSSES.
- Military Law Enforcement shall be escorted at all times by a designated DOE-OSSES representative.
- Weapons will not be allowed in restricted areas or industrial complexes at any time.

7.8 Death of Military Personnel

The FGRC-SRS will immediately notify the DOE POC in the event of a death of a soldier(s). Most Army units have sufficient, qualified personnel that can determine if a soldier is positively deceased. In most situations, the Army would evacuate a soldier to the nearest hospital regardless of situation or circumstance. The Army may request SRSOC assistance in obtaining the services of a coroner to come to the scene to pronounce the soldier deceased. Whatever the cause of death, the Army will cease all training activities until the soldier has been pronounced deceased by qualified personnel and evacuated from the training location. The unit will not resume training until the senior Army/military commander on SRS has accomplished the following:

- The DOE POC has been notified of the death. The Army will follow direction and guidance from the DOE POC.
- Evacuated the deceased soldier(s) off SRS.
- The scene where the death occurred is secure and evidence of cause of death is preserved.
- An investigation is initiated by the Army.
- Probable cause of death is determined.
- If DOE-SR becomes involved, all questions have been answered satisfactorily.
- The senior Army commander feels confident his unit can begin training.

7.9 Severe Weather

7.9.1 Severe Weather Alerts

SRSOC will notify FGRC-SRS of severe weather conditions using the “All Call” system and Remote Worker Pager for Severe Weather Announcements (see chapter 6). FGRC-SRS will follow all emergency instructions issued by SRSOC and ensure units have been alerted and have taken appropriate safety precautions.

7.9.2 Thunderstorms

Unpredicted pop-up thunderstorms are possible. In this event, units will take immediate action to ensure the safety of their soldiers and notify FGRC-SRS immediately.

7.9.3 Tornados

Should Army units find themselves in the direct path of a Tornado(s); soldiers will immediately lay face down in a ditch or depression; Kevlar helmets will be worn if available. Once tornados have passed, units will immediately report the Tornado and conduct accountability of all soldiers to the OIC, the OIC will report accountability immediately to FRC-SR personnel.

If units are warned of imminent tornados, the OIC and leaders will move soldiers to safe, low-lying areas. Lie flat in a nearby ditch or depression and cover your head with your hands. Be aware of the potential for flooding. Do not get under an overpass or bridge. You are safer in a low, flat location. Never try to outrun a tornado in urban or congested areas in a military vehicle. Instead, leave the vehicle immediately for safe shelter. Watch out for flying debris. Flying debris from tornadoes causes most fatalities and injuries.

7.9.4 Flash Floods

Flash floods occur when large amounts of rain saturate the earth causing swift torrents of fast moving water in a short period of time.

Army units encountering flash flood conditions will ensure the safety of soldiers first; then, report the flood conditions to FGRC-SRS. Units are forbidden to cross flooded streams, creeks, valleys, roads, or submerged bridges by foot or vehicle.

If a flood is likely in your area, the OIC will follow all emergency instructions from FGRC-SRS or SRSOC. All leaders must be aware that flash flooding can occur. If there is any possibility of a flash flood, move immediately to higher ground. Do not wait for instructions to move. Be aware of streams, drainage channels, canyons, and other areas known to flood suddenly. Flash floods can occur in these areas with or without such typical warnings as rain clouds or heavy rain.

If you must prepare to evacuate, you should do the following. Ensure tents, trailers, and other vehicles are empty of all personnel prior to evacuation. If possible, secure sensitive items if time is available. Shut down generators or other electrical equipment if you find yourself standing in water. Turn off utilities at the main switches or valves if instructed to do so. Disconnect electrical equipment. Do not touch electrical equipment if you are wet or standing in water.

If you have to leave your training area or facility, do not walk through moving water. Six inches of moving water can make you fall. If you have to walk in water, walk where the water is not moving. Use a stick to check the firmness of the ground in front of you. Do not drive into flooded areas. If floodwaters rise around your car, abandon the car and move to higher ground if you can do so safely. You and the vehicle can be quickly swept away.

The following are important points to remember when driving in flood conditions. Six inches of water will reach the bottom of most vehicles causing loss of control and possible stalling. A foot of water will float many vehicles. Two feet of rushing water can carry away most vehicles including HWMMVs.

7.9.5 Lightning

The OIC or Army leaders will take the following actions should Army units encounter lightning. If possible go into a hard structure. Tents and portable shelters do not provide protection against lightning. If in a hard shelter and you hear thunder, don't go outside unless absolutely necessary. Remember, by counting the seconds between the flash and the thunder and dividing by 5, you can estimate your distance from the strike (in miles).

Stay away from anything that could conduct electricity. This includes metal tent frames and portable structures. Don't use any plug-in electrical devices. If lightning strikes an electrical device they can conduct the charge to you. Don't use the telephone during the storm. Lightning may strike telephone lines outside.

Stay in your military vehicles or sedan if you are traveling. Automobiles give you excellent lightning protection. Don't use metal objects outside, like shovels, axes, and mattocks. Get out of the water. This includes getting off small boats and rafts during rivers operations.

If you're outdoors, seek shelter from lightning. Buildings are best for shelter, but if no buildings are available, you can find protection in a cave, ditch, or a canyon. Trees are not good cover. Tall trees attract lightning.

If you can't find shelter, avoid the tallest object in the area. If only isolated trees are nearby, your best protection is to crouch in the open, keeping twice as far away from isolated trees as the trees are high. When you feel the electrical charge -- if your hair stands on end or your skin tingles -- lightning may be about to strike you. Drop to the ground immediately.

7.10 Lost Soldiers

Soldiers should not walk into the woods alone, day or night. SRS has vast, expansive lands with deep lakes, streams, and valleys. It is very easy to become lost. Soldiers in field training environments should work or move in pairs when navigating through the forest.

Soldiers who find themselves lost will immediately stop where they are, and remain calm. Soldiers will accept the situation and realize they are lost. Next, soldiers will assess the situation and available supplies you have. Use communications to report your location immediately if available. Remain calm at all times. Once calm, you can start making decisions. Soldiers will decide if they should hunker down or move. Depending on the situation, you have to take a lot into account. If you know for sure that the highway is due east and you have your compass, then it would probably be a safe decision to move east. If you’re badly injured and someone will be looking for you, you should most likely stay put. Consider all of the factors and make your decision from there.

If you decide to hunker down, your two concerns are shelter and warmth. Don't trust that you'll have a dry night—set up shelter, and do it before it gets dark. You should ideally start getting ready an hour or two before the sun sets to give yourself plenty of time.

If you're going to be able to make a fire, gather as much firewood as possible. Once you've done that, look at your pile and get five times more than what you have. That's how much you'll need. Fashion a tent or lean-to. If you can, set up somewhere you can get out of the wind, that's ideal—wind is the biggest killer, so do what you can to get out of it.

All leaders will contact the OIC or RSO immediately when you first realize a soldier is missing in the woods. Do not wait in hopes the soldier(s) will return. FGRC-SRS will contact SRSOC immediately. Mutual coordination between SRSOC, FGRC-SRS, and the Unit OIC will be made until the lost soldier is found.

7.11 Plant Vogtle Nuclear Power Generating Plant, Georgia

Plant Vogtle Nuclear Power Generating Plant is located south of SRS in Georgia. The Savannah River separates Plant Vogtle property from SRS. The TFC will notify Plant Vogtle 30 days in advance of all aircraft and training that will be n close proximity of Plant Vogtle. Unless an emergency arise, all Army training is restricted from landing watercraft on Plant Vogtle Property.

Plant Vogtle Security Forces conduct routine patrols of its property line on the Savannah River. If Army watercraft or personnel must land on Plant Vogtle shores, the OIC will contact FRGC-SRS personnel immediately. FRGC-SRS personnel will immediately contact Plant Vogtle Center Alarm Station with notification that Army Personnel are on their property. The FRGC-SRS will provide notification to the SRSOC and the Plant Vogtle Center Alarm Station of any Incidents on the Savannah River adjacent to SRS or Plant Vogtle Property.

7.12 Downed Army / Military Aircraft on SRS

Upon notification of missing Army aircraft on SRS, the Army will cease all training activities and notify the DOE-SR POC and the SRSOC immediately. The Army will respond to the last known location of the military aircraft with all available air and ground assets. The Army may request the SRSOC to activate SRS downed aircraft procedures and provide command and control for the aircraft search and rescue until such time as the Army can establish its own response structure.

The Army may request that the DOE-SR Emergency Operations Center (EOC) provide operational control throughout the downed aircraft search, rescue, and recovery mission. In such cases the Army will assist DOE-SR EMS until the aircraft is found, all injured soldiers are accounted for, and the crash scene is secured. The crash scene will remain under control of SRS until such time that it has completed all steps in its downed aircraft procedure or the Army notifies the EOC that it is ready to assume control of the recovery of the aircraft and crash scene. As noted in section **7.4,** the investigation and reporting remain the responsibility of the Army.

Chapter 8
Environmental Compliance, Protection, and Considerations

8.1 Army Environmental Protection Responsibilities
Fort Gordon Range Control – Savannah River Site (FGRC-SRS) and the Army unit training on SRS are responsible for ensuring all training is conducted in an environmentally responsible manner. The verification activities, and the level of effort, will vary based upon the type of training. The DOE-SR POC will coordinate with appropriate Site organizations during the 90,60,30 day approval process to develop monitoring plans and schedules commensurate with the intensity and potential for impact of the activity.

8.2 Rotation of Training Land
In working with multiple Army units to develop and coordinate training plans, the TFC will rotate the use of training areas, when feasible, to reduce the potential for cumulative impact.

8.3 Digging
No digging, including shallow hasty defense positions, is allowed on the Site except locations which have undergone an archeological survey and are designated on the Training Area Planning Map. These are generally areas that have been previously disturbed. At the request of the Army, additional areas may be considered to allow digging. Such requests may require an archeological survey prior to approval.

8.4 Sustainable Training Field Cards
Sustainable Training Field Cards will be provided to each training unit. These are quick reference cards that will address pertinent topics such as threatened and endangered species, off-limits areas, cultural resource sites, policing of training areas, vehicles use, field sanitation, POL handling, fuel spills, wetland protection, fire, medical emergencies, and unexploded ordnance.

8.5 Training Coordination Meetings
On an as-needed-basis to eliminate interference and conflict between the Army, the USFS-SR, and SREL field activities, the Fort Gordon Range Control Training Facility Coordinator (FGRC-TFC) will schedule meetings to supplement the 90-60-30 day planning and approval process.

8.6 Training Area Inspections
Prior to, during, and after an Army unit occupies a training area, the TFC will inspect the location to identify and address environmental concerns related to the training activities (see guidance in chapter 5).

8.7 Refueling Operations
Refueling operations are authorized on SRS. Refueling is prohibited within 200 feet of protected species sites or wetlands. See Chapter 5 for specific refueling procedures.

8.8 Hazardous Substance Spills
Units will immediately report all hazardous substance spills regardless of size (such as fuel, engine oils, radiator coolant, and hydraulic fluid) to the FGRC-SRS. The FGRC-SRS will notify the DOE-POC and the SRSOC immediately of all hazardous spills and, if needed, request assistance for hazardous material recovery. The DOE-POC will contact the Environmental Quality Management Division to determine if HQ notification is required. Units should have Dry Fuel spill kits or Dry Sweep on hand to remove hazardous spills from hard surfaced roads. Spills in training areas will be dug up, triple bagged, and removed from SRS by the using unit. SRSOC will contact the Site Environmental Protection Coordinator (SEPC) who will coordinate spill notification to appropriate organizations and agencies and provide confirmation to DOE that offsite reporting has been completed as required.

8.9 Refuse Disposal
The Army will dispose of trash as stipulated in chapter 5.

8.10 Black and Grey Water Disposal

Waste water streams generated by selected training activities would include sanitary waste water from portable toilets (black water) and water from field kitchens and hand washing type stations (grey water).

Black water would be collected and transported either off site for disposal or to the SRS Sanitary Waste Water Treatment Facility (SWWTF) for treatment and disposition.

Grey water may be released to the environment as stipulated in an approved training plan (see guidance in Chapter 5). Approval for release to the environment will give consideration to such factors as the number of personal involved in an exercise, the length of the exercise, and the proposed management of the water. While grey water is not hazardous, the general intent is proper management to prevent a vector borne nuisance problems. For example, pots, pans, plates and dishes must first be scraped to remove the food residue before washing. The pre-washing residue would be treated as waste to be disposed of as described in the **Disposal of Sanitary Waste** section of chapter 5**.** The grey water could then be broadcast or channeled into sumps or surface locations. Grey water will not be deposited into streams, lakes or wetlands. Grey water broadcast would be rotated to reduce soil saturation. The TFC would consider past training locations and the potential for cumulative effects in working with units on the selection of sites for training activities that would include field kitchens and washing facilities.

If not approved for release to the environment as indicated above, grey water must be collected and transported off site or disposed through the SRS Sanitary Waste Water Treatment Facility (SWWTF).

8.11 United States Forest Service-Savannah River Site (USFS-SRS) Timber Management

8.11.1 Timber Harvest Operations

The USFS-SR manages the Site's timber resources for harvest year around. Trees are harvested and removed using large trucks and trailers. Main roads, improved roads, unimproved roads, and fire breaks are used during harvesting operations. During harvesting operations, the harvest boundaries will be off limits to Army Training units. USFS-SR and the Army may mutually utilize the roads for the purpose of moving from one location to another. The TFC will be provided harvest locations by the USFS-SR as required during the 90-60-30 day planning and approval process.

8.11.2 Prescribed Burns

Prescribed burns are primarily conducted January through March however occasional burns are also conducted in the summer. For the most part these are unscheduled events that may be conducted at anytime as conditions merit. Tentative controlled burn locations will be identified during the 90-60-30 day planning and approval process. If the USFS-SR needs to initiate a controlled burn in an area being actively used by the Army for training, they will notify the TFC and the DOE-POC as soon as practical. Actions will be initiated to modify the approved training plan as necessary so the Army unit can move to another training location to facilitate the controlled burn. The USFS-SR will not burn while the Army occupies proposed burn locations.

8.11.3 Fire Towers and Equipment, Radio Towers, Wind Towers

There are various towers located on the Site including USFS-SR Fire Towers and associated heavy equipment. All such structures and equipment are restricted from access and use by the Army**.**

8.12 Wild Life Management

8.12.1 Scheduled Deer Hunts

Deer hunts occur every Wednesday and Saturday between the 3rd Week of October and the middle of December. Hunts are also scheduled in May. Hunters use shotguns with buckshot and dogs drive the deer. The dogs wear location tracking devices for the purpose of recovering lost dogs at the end of each hunt. Up to three (3) compartments are designated to accommodate approximately 150-200 hunters during each specific hunt.

The FGRC-TFC will request the Deer Hunt schedules on the last day in May. Army training will be scheduled so as to not interfere with hunts and hunting dogs that may inadvertently wander into approved Army training locations will not be interfered with or detained in any way.

8.12.2 Deer Spotlight Survey
Deer Spotlight Surveys are conducted over a 10 night period in February. Survey workers cover approximately 25 miles in the northern and southern portions of SRS for a total of 50 combined miles 50 each night. The estimated schedule for the survey is from 1700 hours (5:00 PM) until 2400 hours (Midnight). The FGRC-TFC will request the Deer Spotlight Survey Schedule in May along with a Map from the USFS-SR. The FGRC-TFC will coordinate training around deer survey periods and locations.

8.12.3 Deer Capture
Deer capture is conducted January through July to monitor the deer population. After capture, deer are tranquillized, fitted with tracking devices and released. The FGRC-TFC will receive schedules and locations of Deer Capture from USFS-SR. Mutual coordination between USFS-SR and the Army must be initiated to work around Capture projects.

8.12.4 Hog Hunts
Hog hunts are conducted on Fridays and Saturdays year around but are most prevalent in the fall and spring. The schedule and location varies and is generally dependant on need and urgency after hogs have been reported as a nuisance. Removal is done by trapping and sniper shooting at night from highways and tree stand locations. Hunters may walk into the woods to survey trap locations. The USFS-SRS will notify the TFC to coordinate Hog Hunts in, or adjacent to, Army training locations.

8.12.5 Coyote Survey
The USFS-SR conducts 6 surveys per year to count coyotes. There are 43 point-count stations across the SRS. Surveys are conducted between mid January and mid March, commencing at sunset and lasting until about 1AM. Call boxes are attached to fixed locations that emit a simulated howl of a coyote. The call box records the amount of responses from live Coyotes. The USFS will provide locations of point-count stations across SRS to the TFC. A quarter mile buffer will be placed around call stations during Army training events.

8.12.6 Turkey Hunts
Two days in April are set aside for 26 hunters. Most of these hunters are mobility impaired. The USFS-SR will provide turkey hunt locations to the TFC. The Army will not train in turkey hunt locations when these areas are active.

8.13 Threatened, Endangered, and Sensitive (TES) Populations
TES plant and animal populations are found across SRS. The location will be identified during the 30,60, 90 day planning process and evaluated to avoid or minimize negative impacts from training activities. Threatened and endangered plant populations are marked by signs and yellow chains. Units that encounter these populations are prohibited from entering these locations.

8.13.1 Red Cockaded Woodpecker (RCW) Management
RCW cluster populations are designated on the Training Area Planning Map. Cluster populated trees are marked on the ground with a single white or yellow band. Army dismounted training and vehicles may transit through RCW active clusters but should not loiter nor conduct training activities. Vehicle traffic will be limited to SRS roads within RCW Clusters. Blank ammunition training and pyrotechnic will not be used within 200 feet of RCW active clusters. The TFC will coordinate with the USFS-SR prior to each training event to ensure RCW work is not taking place at proposed Army training locations.

8.13.2 Pondberry (Endangered)
Pondberry occurs in shallow depressions in wetland habitats, along margins of cypress ponds and in seasonally wet, low areas among bottomland hardwoods. Pondberry grows in dense thickets with erect or ascending shoots up to 2 m tall with few branches. Stems are connected underground by stolons. Thickets of female plants tend to be shorter lived and smaller than those of males and are sometimes

absent from populations. Die-back of stems is a fairly common occurrence. Units may train adjacent to wetlands which are prime habitats of the Pondberry plant. Pondberry locations my be marked using yellow chains which surround the plot. These locations will be identified to all soldiers during the SRS Site Orientation briefing. Foot traffic will not come within 50 meters of marked Pondberry locations. Wheeled vehicles may travel on existing roads that traverse the Pondberry habitat.

When feasible, the Fort Gordon Range Control (FGRC) will plan training activities away from this protected plant. FGRC will spot check daily Pondberry habitat should training activities come within 100 meters of protected Pondberry Locations. FGRC will verify through the USFS-SR, that the population locations have not been affected by Army activities. Three days prior to any training activity, FGRC will inspect the Pondberry locations for pre-existing damage. A photo of the Pondberry and the locations of the plant will be presented to all soldiers during the unit orientation briefing.

8.13.3 Smooth Purple Coneflower (Endangered)
The Smooth Purple Coneflower found in sunny sites associated with woodlands and prairie-like settings. These sites include open woods, barrens, roadsides, clear-cuts, dry limestone bluffs, and power line rights-of-way. Periodic disturbance is necessary for the maintenance of open conditions. A photo of the Smooth Purple Coneflower will be shown to all soldiers during the SRS Site Orientation Briefing. Most federally protected plant locations are marked using yellow chain which surrounds the plot. Soldiers will go around Coneflower plots and will not cross Coneflower locations. Wheeled vehicles may travel on existing roads that traverse through Coneflower habitat. Since there are only a few Coneflower locations, Fort Gordon Range Control (FGRC) will plan training ground activities away from these protected areas. FGRC will spot check daily Coneflower habitat should training activities come within 100 meters of their location. The FGRC will verify, through the USFS-SR, that specific locations have not been affected by Army activities. Sand Box road, which parallels road 9, is a known Smooth Purple Coneflower plot and will be restricted to access by Army tactical convoys.

8.13.4 Gopher Tortoise
The USFS-SR will provide known Gopher Tortoise locations to Fort Gordon. These locations are marked with rebar and orange ball caps. The TFC will use the Fort Gordon policy towards tortoises and burrows. A 25 foot radius will be placed around each tortoise burrow. Army training will not be conducted within the 25 foot radius.

8.13.5 Short- Nosed Sturgeon (Endangered)
Sturgeon spawn February through April. Locations north of the Savannah River are known as Short-nosed Sturgeon spawning grounds. [redacted] are projected to use approximately 11 miles of river and shore line on the Savannah River Site boundary to conduct training. While the spawning locations are away from the proposed water access and infiltration locations near D-Area, military training activities are prohibited in the proposed training location on the Savannah River from February to April.

The largest training activity on the Savannah River would [redacted]. Usually, no more than 2 boats are deployed at any one time. Watercraft would tactically infiltrate SRS property to conduct training. Training explosives will not be deployed subsurface on the Savannah River. Blank ammunition and pyrotechnics may be used on tactical military water craft.
Photos of the Short-nosed sturgeon will be shown to every soldier during the unit orientation briefing for SRS. Soldiers are prohibited from harassing the Short-nosed Sturgeon if sighted while conducting military training.

8.13.6 Wood Stork (Endangered)
The wood stork forages locally in temporary ponds, shorelines, bottomlands, and swamps on SRS. This species has not been found nesting on SRS. Wood storks are large, long-legged wading birds, about 45 inches tall, with a wingspan of 60 to 65 inches. The plumage is primarily white with a short black tail. The head and neck are largely un-feathered and dark gray in color. Immature birds have dingy gray feathers

on their head and a yellowish bill. Feeding often occurs in water 6 to 10 inches deep. As a result of the training limitations imposed in section **8.13,** the Wood Stork should not be impacted by Army training activities. Never the less, a photo of the Wood Stork will be shown to all soldiers, as well as recent sighting locations, during the SRS Unit Orientation Briefing.

8.13.7 Alligators
Alligators live in swampy areas, rivers, streams, lakes, and ponds on SRS. Once a federally listed endangered species, alligators have recovered in many areas. The species is still federally listed as threatened because it looks like the American crocodile, which is endangered.

All military units training on SRS are strictly forbidden from feeding, disturbing, or harming any alligator. Soldiers will be made aware of Alligator presence near the Savannah River, and SRS lakes and ponds during the unit orientation briefing prior to the commencement of any training activity, with special emphasis if the training is to be conducted near alligator habitat. However, tactical training as discussed throughout this JSOP should not impact Alligator habitat due to the training limitations imposed in section **8.13.**

8.13.8 Eagle Territory Management Zone (TMZ)
At the locations shown on the Training Area Planning Map, there are two eagle TMZs located on SRS. Military units will not train in Bald Eagle TMZs. Units may convoy on, or foot-march on the side of, Road B to and from training areas. Aircraft must maintain a minimum altitude of 1000 ft. over the TMZ area when flying over SRS.

8.13.9 Long-eared Bat Roosts
Currently, the Long-eared Bat is not on the Threatened Endangered Species (TES) list. However, trees have been identified as roost locations for the bat. Roost locations will be identified by FGRC-SRS prior to an Army unit occupying SRS lands for training. Soldiers may train near these roost locations but must not physically disturb the roost tree.

8.14 Archeological Sites and Cemetery Locations
There are 1000's of known Archeological sites and cemeteries on SRS. Some are well preserved and marked. The Army is prohibited from entering or disturbing these Archeological Sites and Cemeteries. Found archeological artifacts such as pottery, arrow heads, and old home sites will be reported to the TFC immediately. Found artifacts will not be removed from SRS by training units.

8.15 Department of Energy (DOE) Set-aside Areas and Special Study Areas
The University of Georgia's Savannah River Ecology Lab (SREL) and the United States Forest Service-SRS (USFS-SRS) conduct a multitude of ecological studies at SRS. The terms "Set-Aside" and "Special Study Area" reference the physical location and boundaries of the individual study sites. The study areas vary widely in size and purpose. Depending on the purpose of the studies, these areas may or may not be off limits to training.

Unless specifically designated as off limits, these areas are approved for dismounted training activities. In cases where roads transect such locations, wheeled vehicles and foot traffic on the road is allowed. The TFC will work with the Units and appropriate Site personnel during the 90, 60, 30 day planning and approval process (see Chapter 3) to identify Set-asides that may be encountered. As a general rule, Set-aside locations would not be selected for training if alternate locations equally suitable are available.

Set asides that are specifically off limits are generally smaller in size. Those that are off limits will be designated as such on the Planning Training Map and/or identified on the ground by signs or boundary makers. Identifying "off limits" set asides will be addressed in the Unit Orientation Briefing.

8.16 Water Impoundments, Rivers, Streams, Wetlands

8.16.1 Water Impoundments
Water impoundments refer to the lakes and ponds of the Site. This includes L-Lake, PAR Pond, etc. The water in the impoundments do not pose problems related to potential use for training but there is potential for segments of some impoundments to have radiological contamination contained in the sediment of the lake bed. For this reason, as a general rule the impoundments will be considered off limits to military training activities. Cases by case requests may be considered for activities which would not have the potential for disturbing the sediment.

8.16.2 Streams and Stream Crossings
Sections of some SRS streams contain low levels of radiological contaminants in the sediment. These locations are generally designated on the Training Planning Map. These areas are off limits to Army foot and vehicle traffic. In all cases units must use **existing** bridges to cross contaminated streams or use alternate routes. Sections of streams known to be uncontaminated may be available for Army training activities. However, unless specifically allowed otherwise in a training plan approved through the 90,60,30 Day approval process, even for uncontaminated streams, whether by foot or vehicle, units will cross streams to transit from one training location to another on **existing** bridges only.

8.16.3 Wetlands
In accordance with the Regulatory Program of the US Army Corps of Engineers Part 328 - Definition of Waters of the United States, "wetlands" are defined as those areas that are inundated or saturated by surface or ground water 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. Wetlands generally include swamps, marshes, bogs, and similar areas.

Army training will not be conducted in wetland locations as defined above. During the unit orientation briefing, specific restrictions on training near wetlands will be provided to each training unit based on the location of specific training activities. The Army may train adjacent to wetlands. Army wheeled vehicles may travel through wetlands on established roads, fire breaks, bridges or improved trails. Foot traffic may negotiate on high ground through Wetlands. Wetland crossing areas will be identified during the screening process and mapped to provide exact routes to each training unit. For FARP and ROM operations, a 200 buffer will separate fueling activities from Wetlands.

8.16.4 Savannah River
[redacted] are projected to use approximately 11 miles of river and shore line on the Savannah River Site boundary near D-Area. This area includes the D- Area boat ramp and the 681-1G Pump House, otherwise known as 1G Pump House. Prior to use of the Savannah River, the need for possible restrictions will be considered due to the potential for contamination of the sediment in some areas. Approval for use of the river will be as stipulated through the 90,60,30 Day review process

8.17 Waste Units/Remediation Sites
There are many RCRA/CERCLA waste units and Decommissioning and Deactivation (D&D) facilities on SRS that are managed by DOE in accordance with a Federal Facility Agreement (FFA) with the US EPA and SCDHEC. These waste units and D&D facilities have been, or will be, cleaned up as approved in a Site Evaluation Report or CERCLA Record of Decision. The majority of these waste units and D&D facilities are located within the boundaries of Site industrial areas designated as off limits for Army activities. Any RCRA/CERCLA waste units and D&D facilities located outside of the industrial areas are also off limits unless specifically designated otherwise according to the provisions of this section. The locations of the RCRA/CERCLA waste units and Decommissioning and Deactivation (D&D) facilities are identified on the Training Area Planning Map as referenced in Chapter 3.

Waste units are also identified on the ground with visible boundary markers and access control warning signs to clearly delineate the area of contamination. The SRS Military Training Orientation Briefings contains information and visual aids so that Army personnel are aware of and can clearly identify the

waste units and D&D facilities should they be encountered. Unless specifically designated otherwise according to the provisions of this section, waste units and facilities that have not been evaluated or released for use will be off limits to Army activities. The Army is responsible for prohibiting encroachment into these areas and may be required to place temporary warning markings (i.e., signage, flagging, cone markers, etc.) during training exercises should additional markings be necessary. Waste units and facilities that have been evaluated and released for unrestricted use are available for Army training exercises. Waste units where Land Use Controls (barring residential/unrestricted use) are in effect via a Record of Decision will be off-limits unless subject to the exception below:

Exceptions to the off limit restrictions for waste units and D&D facilities include the following:

- D&D facilities that have not been fully assessed may be approved for Army training exercises if sufficient information is known about the facility to determine that there are no contamination concerns. Any special conditions for the use of these facilities will be assessed during the 90, 60, 30 day planning and approval process described in Section 3.
- The Dunbarton Railroad Yard is a FFA waste unit identified as off limits on the Training Planning map. However, the railroad and railroad yard is presently being actively used and will not be fully investigated for environmental impacts while it remains in service. An exception has been made to allow the Army to use the Dunbarton Railroad Yard for offloading of military vehicles and equipment. If any special conditions for the use of this area are required, they will be identified during the 90, 60, 30 day planning and approval process described in Chapter 3.
- The SRS has six Integrator Operable Units (IOUs) defined as surface water bodies (e.g., site streams and associated wetlands). Sufficient information is known about the IOUs to determine that there are some IOU sections with no contamination concerns that may be available for Army training activities. Contaminated IOU sections are located within the “rad admin buffer” designation as shown on the Training Area Planning Map. Refer to Sections 8.13.2 and 8.15 of this chapter for further information about radiological contamination buffers and stream crossing restrictions. Any special conditions for the use of uncontaminated IOU sections will be assessed during the 90, 60, 30 day planning and approval process described in Section 3.
- Waste units where Land Use Controls are in effect through a Record of Decision may be used on a case-by-case basis only with explicit DOE approval. DOE must obtain EPA and SCDHEC approval for any such use, to ensure that the use is consistent with the applicable land use/exposure restrictions (typically industrial) in effect.

8.18 Rad Admin Buffer Areas

Segments of some SRS water bodies (streams and lakes) on the Site contain, or are suspected of containing, radiological contamination in the sediment. This is the sediment of the stream bed, not the water itself. These contaminants are the result of seepage from past industrial processes and facilities. This is also true for sections of the Savannah River. Such areas have been identified and entry for all Site users is regulated accordingly to avoid exposure through disturbance of the sediment.

The "rad admin buffer” designation, as shown on the Training Area Planning Map (See section **3.5 SRS Training Area Planning Map**) by the thin pink stripes, represents an extremely conservative buffer area around entire Site water bodies if any segment of the water body is suspected of having contaminated sediment.

This approach places the buffer area boundaries well beyond known or suspected contamination segments as an additional protection measure to prevent a military training unit from even coming into close proximity of a suspected radiological source.

When planning for training activities, the military is to consider entry into the rad admin buffer areas as prohibited for training purposes unless specified otherwise according to limits and conditions spelled out in the JSOP (see section **4.8 Savannah River Site (SRS) Restricted Areas**) or as specifically authorized in an approved training plan that has been finalized through the 90, 60, 30 day review and approval process.

Chapter 9
Ammunition Handling

9.1 Ball Ammunition and Lethal Ammunition
Ball and other lethal types of ammunition are prohibited from entering SRS.

9.2 Training Ammunition
[redacted].

9.3 2-chlorobenzalmalononitrile (CS Gas)
CS Gas is prohibited on SRS lands for Army training purposes. Colored smoke (including white) is authorized. Colored smoke may used for signaling, marking, and to simulate battlefield effects.

9.4 Ammunition Declaration
All ammunition will be declared NLT 30 days prior to the first day of training by submitting a DA Form 581 or official memorandum signed by the Battalion S-3 through the Training Facility Coordinator (TFC). Ammunition on the DA Form 581 or memorandum will be listed by type and DODIC and provided to DOE-SR as part of the Unit Coordination Packet.

9.5 Ammunition Holding Area
Army units will establish an AHA to secure training ammunition. AHAs will be located at least 100 feet from fuel supply points. If an Ammunition Holding Area (AHA) has been established, units will provide at least one Shovel, Pick/Mattox, Axe, and 2 each 10 Lb. (or greater) ABC Rated, dry chemical fire extinguishers for the purpose of fighting fire. Firefighting equipment will be located near, but not on, the AHA. Tents may be used to shelter the guard force inside the AHA location.

Units will not centrally locate ammunition of military vehicles for the purpose of establishing an AHA. Ammunition may be carried on military vehicles if secured to weapons, personnel, or vehicle load plan as part of the training event.

Other minimum AHA requirements:

1. Triple Strand Concertina Wire perimeter must be established around the AHA
2. 6” clearance / separation from the ground
3. Guard
4. No smoking within 50 Feet signs posted
5. All ammunition must be separated by type and DODIC
6. Dry foliage removed from around AHA
7. Trash and excess dunnage removed as required
8. Covered with water proof tarp

9.6 Daily Ammunition Report
An ammunition expenditure report will be submitted to Fort Gordon Range Control – SRS (FGRC-SRS) at the end of each training day by the OIC or RSO. Ammunition will be reported by type and DODIC.

9.7 Ammunition Laden Vehicles
Military vehicles transporting ammunition must be properly marked using Hazardous Material Explosive Signs and Fire Extinguishers must be on board. A copy of the DA Form 581 must be in the presence of the vehicle operator, TC, or Convoy Commander.

9.8 DUDs

DUDs are classified as those munitions that fail to ignite, explode, or flash as designed for the training event. All DUDs will be reported to FGRC-SRS immediately by the using unit. DUDs are the responsibility of the using unit to dispose of. All DUDs will be removed from SRS by the unit if safe to do so. DUDs will be handled in accordance with established Material Safety Data Sheets (MSDS). The Army unit is responsible for following standard procedures in handling DUDs per each specific ammunition MSDS, safety data sheets, or individual unit SOP. If required, FGRC-SRS will coordinate for appropriate Explosive Ordnance Disposal (EOD) support. If a DUD is located after a training event, FGRC-SRS control will be responsible for safely removing the dud munition.

9.9 Simunition

Units are authorized to use non-lethal Dye Marking Cartridges (DMC) and Ultimate Training Munitions (UTM).

Dye Marker Cartridges (DMC): DMC training ammunition, also known as marking cartridges come in many sizes for pistol, rifle, and submachine gun training. The cartridges usually come in six colors for force-on-force training events offering the most realistic close-range combat training system.

These reduced-energy, non-lethal cartridges leave a detergent-based, water-soluble color-marking compound. The visible impacts allow accurate assessment of simulated lethality. The cartridges are available in .38 cal. and 9 mm caliber and feature tactical accuracy up to 25 feet (7.6 meters). The 5.56 mm caliber is tactically accurate with ball cartridges to 100 feet (30 meters). No special ballistic facilities are required. They meet the need for a force-on-force and man-to-man training system that is realistic, effective, inexpensive, adaptable and fully portable.

DMC Personnel Protective Equipment (PPE): DMC PPE comes in various forms. Most DMC PPE protects the entire head, hands, groin, and other sensitive areas of the body.

Ultimate Training Munitions: All UTM Conversions have a Live Round Lockout as a Fail-Safe feature. The integrated UTM Fail-Safe makes certain a “Live” round cannot be fired in a UTM converted weapon. UTM pistol and rifle conversions are uniquely designed to prevent the firing of traditional “Live” ammunition in the host weapons caliber.

Live Round Lockout is achieved by using a chamber design that has insufficient head space for the weapons standard caliber “Live” round to fully chamber. In the event there is an attempt to chamber a traditional “Live” round in a UTM converted pistol or rifle, the Slide/Bolt will be unable to close because of the “Live” rounds inability to fit in the uniquely shaped UTM chamber. This eliminates the possibility of the converted pistol or rifle to go into battery. When a weapon is out of battery the Firing Pin cannot strike the primer, eliminating the possibility of detonating the “Live” round.

Unlike conventional training ammunition the UTM patented system does not require any propellant other than the two primers. UTM cartridges use only the energy provided by the front primer to propel the projectile for a safe low, controlled velocity (400fps), providing consistent safe impact energies. The isolated and contained rear primer expands the UTM cartridge, which functions the UTM blowback system. This realistically and reliably cycles the converted weapon, ensuring that weapon to weapon differences have no effect on velocities. One source of energy responsible for the function of the weapon and one source of energy responsible for propelling the projectile.

UTM Protective Equipment: Unlike other products, the UTMs Training System allows scripted, scenario based Force-on-Force training using issued uniforms (minimum of two full layers) without having to wear restrictive and expensive body padding. The UTM Training System only requires the user and participants to wear approved safety goggles, face mask and protective gloves. Hearing protection is required when training conditions warrant. All UTM Personal Protective Equipment has been rigorously tested with UTM Man-Marker Ammunition for its ability to provide the user and participants the appropriate level of protection while engaged in Force-on-Force Training.

9.10 Special Training Munitions and Simulations:
The Army uses many types of special training munitions and simulations to enhance training scenarios for its soldiers and equipment. In a typical Army training environment, some training munitions are considered non-lethal based upon their design and purpose for the training, but may be considered otherwise by DOE-SR unless they are fully understood. The Army may request use of special training munitions and simulations through the TFC during coordination for a particular training event. Special training munitions will be coordinated with the DOE-SR Office of Safeguards, Security and Emergency Services (OSSES) on a case-by-case basis and will be documented in the approved Training Plan.

Examples of special munitions used in training include, but are not limited to:

- [redacted]

Chapter 10
Medical Support

Units will provide their own first responder medical support and medical transport capabilities for all training activities on SRS. Combat medics, combat lifesavers, Army surgeons, flight surgeons, and Army doctors may be used as medical support.

10.1 Ground Medical Evacuation

Units may evacuate injured soldiers to local Hospitals. Units will utilize internal patient vehicles for transport. The Fort Gordon Range Control - Training Facility Coordinator (TFC) will provide strip maps to the nearest hospital prior to a training event. OICs will notify the TFC immediately of all injuries and ground MEDEVAC operations. Units will cease all training activity until the patient is safely transported off SRS. Units will not resume training until medical support has been reestablished. The TFC will provide informational notification of the situation to the DOE POC and SRSOC in an expeditious manner.

10.2 Request for Savannah River Fire Department (SRFD) Emergency Response

If needed, Units may request additional Medical Support from the SRFD by contacting the Ft. Gordon Range Control-SRS (FGRC-SRS) utilizing their issued Land Motorola Radio (LMR) or by calling the FGRC-SRS cell phone as a secondary means of communication. FGRC will contact SRSOC with location, number of patients and type of injuries. The unit will post road guides at strategic road intersections to guide SRFD to the patient location. If needed, units may provide tactical vehicle support to the SRFD to assist in extracting patients from remote locations.

10.3 Air MEDEVAC

Units wishing to pre-position an aviation MEDEVAC Helicopter must receive approval from the TFC and DOE-SR.

On an emergency basis, Army units may request use of the DOE-SR Helicopter for Air MEDEVAC by contacting the FGRC-SRS IAW the DOE MEDEVAC Checklist in Appendix G. The FGRC-SRS will then contact SRSOC with the Air MEDEVAC request. The DOE-SR helicopter will be deployed once they have assembled the appropriate SRSFD-SRS Medic. FGRS-SRS will coordinate LZs for patient delivery and pickup. Once on-scene, the SRSFD Medic will further evaluate the patient prior to transport to a local hospital. Unit OICs and RSOs will be briefed on proper air MEDEVAC procedure and provided the DOE MEDEVAC Checklist for reference. Units will use issued SRS Site Map and Grid reference to report and request MEDEVAC support.

10.4 Required Medical Equipment

Unit must bring the following medical equipment when deploying to SRS.

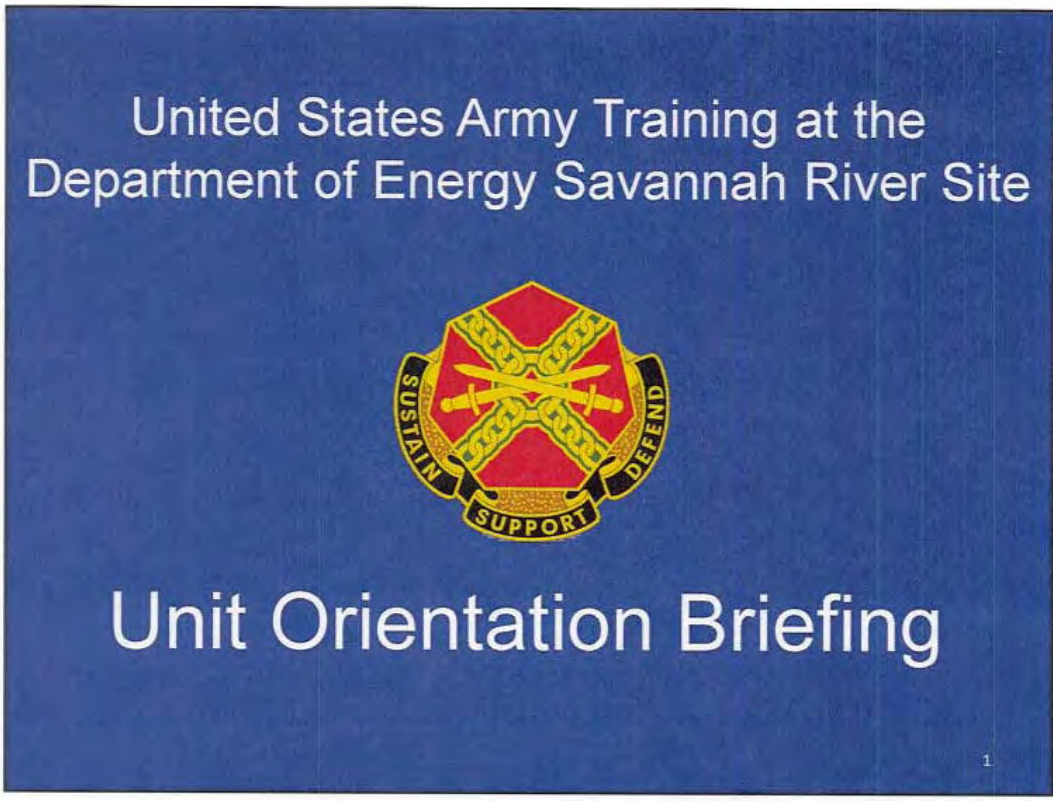
a. Patient transport vehicle.
b. Sufficient Litters.
c. Aid Kits or CLS Bags.
d. Equipment for communication with OIC and RSO as stipulated in Chapter 6..
e. Strip maps to local hospitals.
f. SRS Map.
g. DOE MEDEVAC Request Checklist.

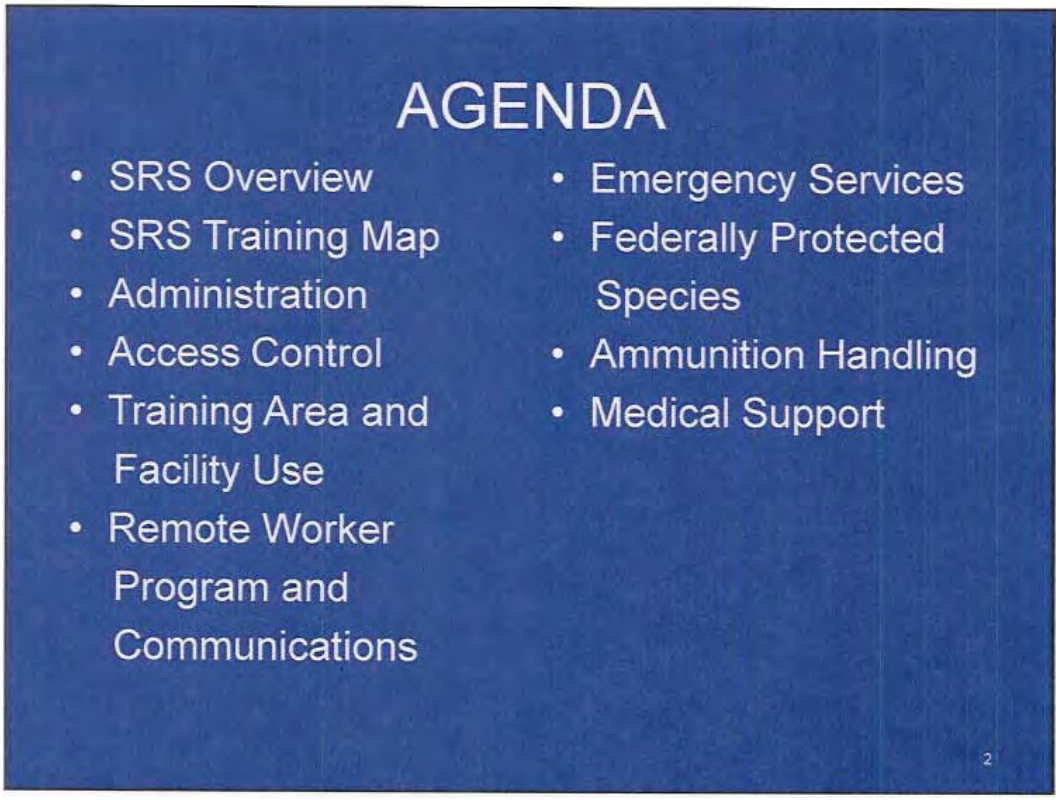
10.5 Non-Participating Personnel

If SRS employees are involved in an accident with Army personnel, vehicles, or equipment in which injuries are involved, whether or not related to military training, the Army will immediately contact FGRC-SRS operations and provide as much information as possible as to the nature of the injury and the exact location of the accident. The SRSFD will have the first response. However, any available on-scene Army soldiers may render medical assistance until SRSFD medical support arrives.

10.6 Memorandum of Agreement with Local Hospitals
The TFC will coordinate with local hospitals for MEDEVAC Support.

APPENDIX – A
Unit Orientation Briefing





SRS Overview

SRS was constructed during the early 1950s to produce the basic materials used in the fabrication of nuclear weapons, primarily Tritium and Plutonium-239, in support of our nation's defense programs.

Currently, there are various industrial complexes throughout SRS which provide a wide range of industrial processes. These are restricted areas and off-limits to the U.S. Army.

SRS covers 312,000 square acres.

120,000 square acres of approved training lands available for use by the Army.

For more information on SRS, go to…… http://www.srs.gov/general/about/history1.htm

3

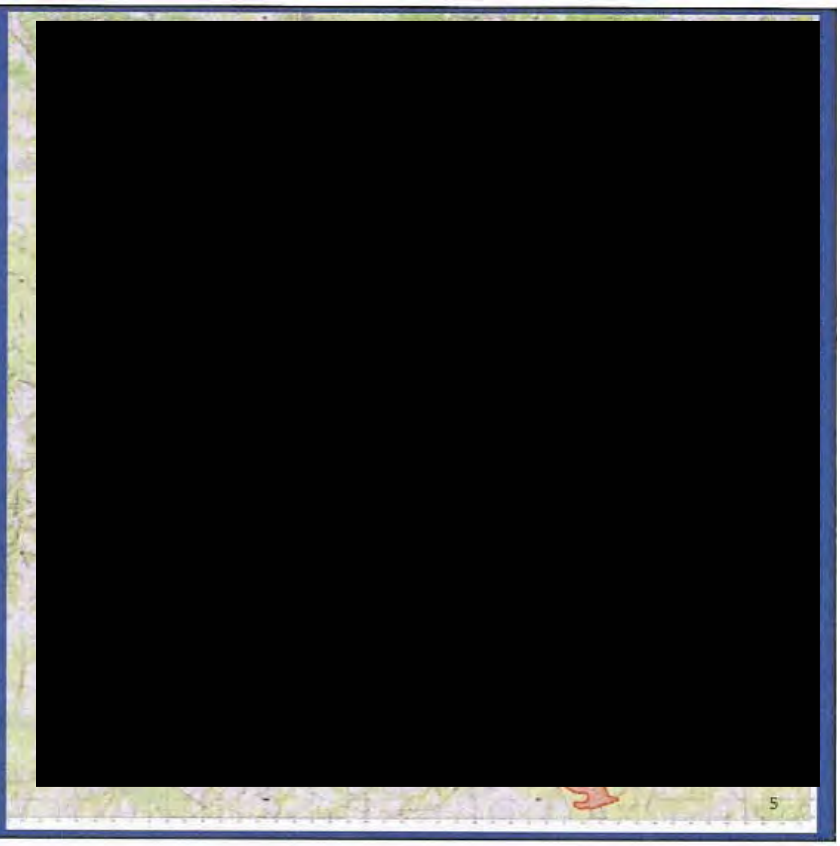
[redacted]

Deployment to SRS should be treated like a foreign nation deployment.

Other than water, trash, and port-a-let support; units "must" provide all classes of supply for the duration of their deployment .

SRS Training Map

- ✓ Restricted Areas
- ✓ Training Areas
  - Air
  - Land
  - Water
- ✓ Roads
- ✓ D-Area
- ✓ Barnwell Airport and DZ's
- ✓ Ground Access Locations
- ✓ Plant Vogtle
- ✓ GTI
- ✓ Energy Solutions
- ✓ Barnwell County Hospital



5

Administration

- **DOE – SR** Provides overall oversight for all activities on SRS, to include all Army and DOD training activities.
- **Training Units** Not authorized direct coordination with DOE-SR or their tenant organizations.
- **Fort Gordon Range Control – Training Facility Coordinator (TFC)** Provides direct coordination between the each training unit and DOE-SR.
- **Fort Gordon Range Control (FGRC)** provides some direct support to the unit.
- **Officers in Charger (OICs) and Range Safety Officers (RSOs)**
  - Designated for each training unit. Will not participate in the training event.
  - Maintains radio communications with FGRC at all times.

6

Access Control – Prohibited Items

- **Weapons and Simulated Weapons**: A Weapon is defined as any article or devise that is usually used for the infliction of serious bodily injury or harm. Weapons include firearms, bows, cross-bows, axes, machetes, and martial arts weapons.
- **Ammunition and/or Devices**: Examples are shotgun shells, blasting caps, grenades, or any item or configuration of items that could cause an explosion.
- **Alcoholic Beverages**: Examples are beer, wine, wine coolers, liquor, or other beverages containing alcohol intended for human consumption.
- **Chemical Irritants:** Examples are tear gas, chemical mace, or any devise containing agents CN, CS, or other chemical irritants.
- **Controlled Substances**: Controlled substances in the possession of a person without a valid prescription are considered contraband.
- **Drug Paraphernalia**: Examples are hypodermic needles and syringes, cocaine spoons and vials, roach clips and pipes designed or intended for use with marijuana hashish, hashish oil, or cocaine.

8

Access Control – Prohibited Items

- **Flammable Items**: Examples are portable containers of gasoline, kerosene, diesel, or similar items.
- **Stun Guns, Explosive tools and/Ammunition**: Stun guns are small devises that generate an electrical shock.

Exceptions: Army units using real weapons, training ammo, simulated explosives, pyrotechnics, flammables such as JP-8, diesel, axes, knives, etc., will be screened and approved for use by DOE Security prior to entry on SRS.

All vehicles and personnel will be inspected for unauthorized contraband prior to access of SRS. Open all trunks, compartments, bags, and doors.

9

Access Control – Personnel Access

Badging: Some critical unit personnel may require a DOE-SR site badge.

Group / Unit Access: All unit personnel will access DOE-SR using an access roster with the following informtion:

- Full name
- Social Security Number
- Rank
- Unit
- Current Clearance

All personnel must receive an SRS Orientation briefing before each exercise.

No additions can be added to the access roster 3 days prior to the training event. Deletions to the list can be made at any time.

Personnel denied access become the responsibility of the unit.

10

APPENDIX – A
Unit Orientation Briefing (Cont.)

Access Control – WSI

11

Access Control – WSI

- At SRS Barricades, follow the instructions of security police officers.
- Do not argue with security officers.
- Minimize discussion, barricades are busy locations.
- If you encounter security police officers in training areas, follow their instructions and contact the OIC or RSO immediately.

12

Access Control – Vehicles

Privately Owned Vehicles (POVs)
POVs are authorized access on DOE-SR for the purpose of meetings, site visits, and reconnaissance of training sites and facilities. The operator(s) of POVs must present the following when attempting to access SRS Perimeter Barricades:

- Permanent or temporary SRS Badge. (If Applicable)
- Valid State Driver's License.
- Current State Vehicle Registration.
- Proof of insurance for that vehicle.

or

- Rental Agreement from Lease Company.

POVs not authorized during training unless specifically approved.

Military Vehicles
Each driver must have a valid state drivers licenses.

13

Access Control – Equipment Lists

The Fort Gordon TFC will submit lists of equipment to DOE Security for screening and approval.

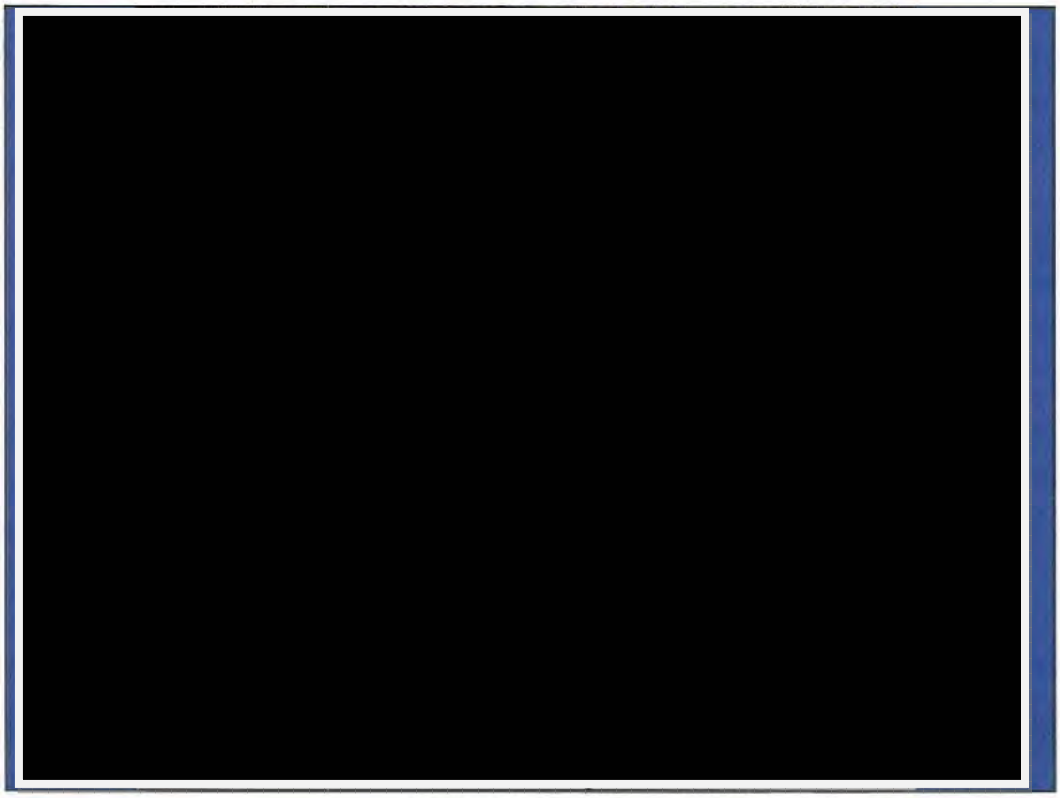
- All Weapons by type.
- Training ammunition by DODIC.
- Communications equipment.
- Surveillance equipment.
- Range finding equipment.
- All Wheeled Vehicles.
- Trailers. Examples are field kitchens, generators, portable generators.
- Waterborne vessels.
- All Aircraft (Helicopter and Fixed Wing).
- NBC detection and decontamination systems.
- Ammunitions by type and DODIC

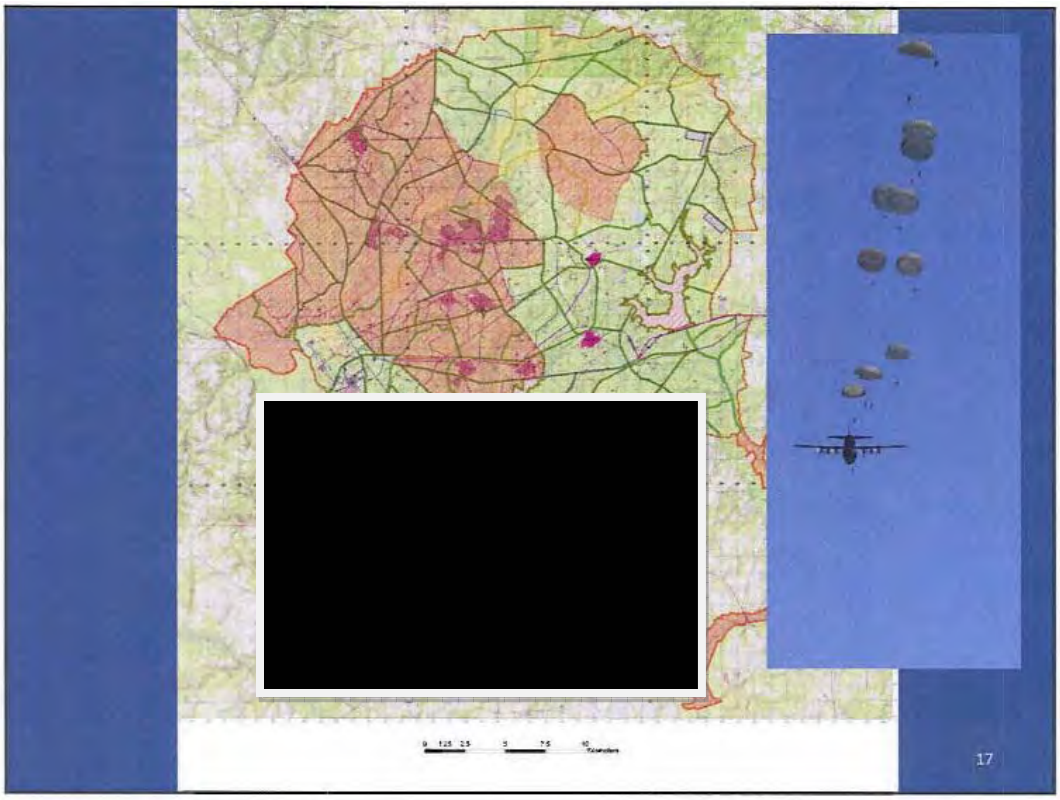
14

Access Control - Aircraft

- Aircraft will submit a DOE Flight Request through the Fort Gordon TFC 60 days prior to the training event.
- Manifests listing total numbers of aircraft and personnel will be submitted to the Fort Gordon TFC.
- Aircraft must follow approved flight cooridors into and out of SRS airspace.
- UAV operations authorized on SRS.
- Aircraft are strictly prohibited from flying over restricted areas as shown on the 1:50,000 scale military map.

15





Air Corridors – Rotary Wing Access

Aviation Communications with SRSOC

The lead inbound Pilot / aircraft of the Army Aviation Unit(s) will contact the SRSOC on the following frequency and call sign:

[redacted]

The lead pilot will inform SRSOC with the total number of aircraft prior to accessing DOE-SR. All Pilots are required to render position reports to the SRSOC every fifteen (15) minutes while in flight over SRS.

18

Savannah River Site Operations Center (SRSOC) and the Emergency Operations Center (EOC)

SRSOC – 24 hour operations center which monitors and provides site emergency response for:

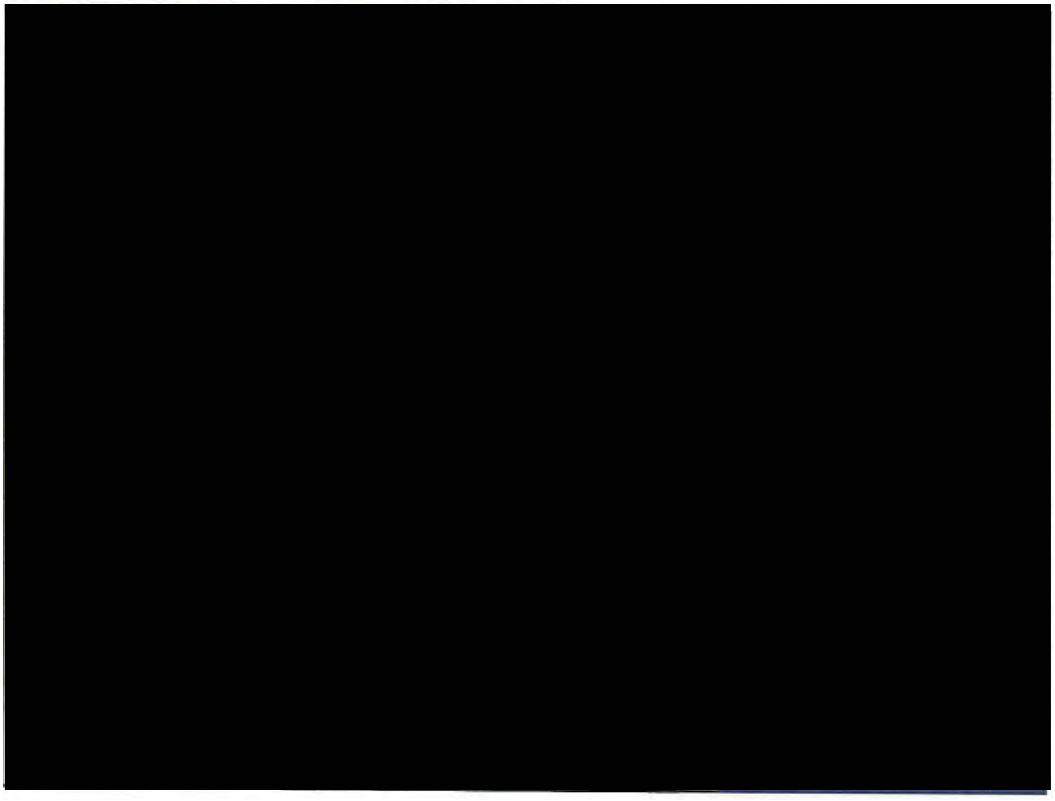
- Fires.
- Wild land forest fires.
- Law Enforcement and public safety.
- Operational Emergencies (Radiological and Chemical).
- Severe Weather

Maintains communications with all remote workers.

Remote Worker Program: All Army units training on SRS will be activated daily into the remote worker program.

EOC – Provides command and control of SRS emergency response assets for all site emergencies. The EOC Coordinates actions with other site tenant organizations during the emergency.

19



Training Area and Facility Use

Daily Administrative Activities

- OIC / RSO and FGRC occupy training areas daily with total numbers of troops and vehicles provided to SRSOC.
- Morning and evening communications checks with SRSOC and FGRC completed.
- Army training units activated into the Remote Worker Program.
- Army training units will monitor terrain for signs of maneuver damage. As soon as possible, units will repair ruts, turns, and other damage.
- Drip pans will be placed under all tactical vehicles when parked; wheels will be chalked with parking brake set.
- Trash will be collected and disposed of daily.

21

Training Area and Facility Use

Daily Administrative Activities continued….

- Units will use port-a-lets for latrine purposes.
- Gray water usage approved per training activity.
- Army training units will not interfere with DOE-SR field operations.
- Army training units will not deliberately contact DOE-SR personnel unless situations arise involving emergency response.
- Report all hazardous spills immediately. Fuel and oil spills will be dug up immediately and removed from the site by the training unit.
- Do not disturb wild life or cut foliage for camouflage.
- Do not disturb found artifacts, leave them where you found them. Report found artifacts to the OIC / RSO immediately.

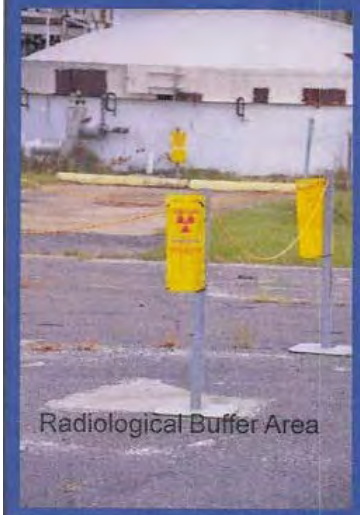
22

Training Area and Facility Use

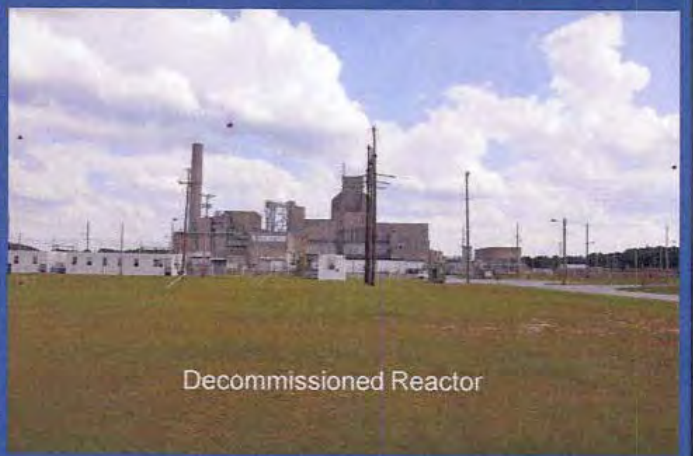
Daily Administrative Activities continued….

- Do not refuel vehicles within 200 feet of wetlands, streams, lakes, or bodies of water.
- Training within wetlands, swamps, and streams is prohibited.
- Cross streams on bridges or designated crossing points.
- Stay out of restricted areas and posted contaminated areas.
- Do not disturb DOE-SR field monitoring stations or forestry study areas.
- Digging operations only in approved locations. Must be approved prior commencement of digging.
- Cell phones are authorized. Use of cell phone cameras is prohibited.
- Cameras authorized on SRS. You are not authorized to take pictures.

23

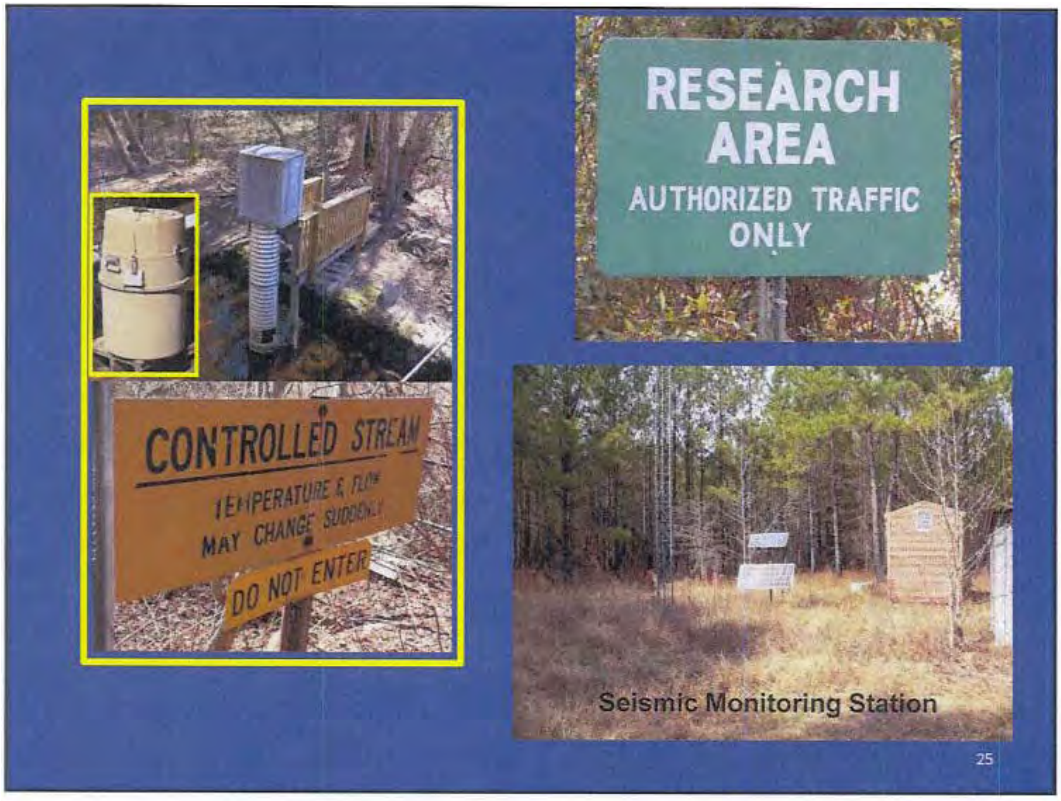


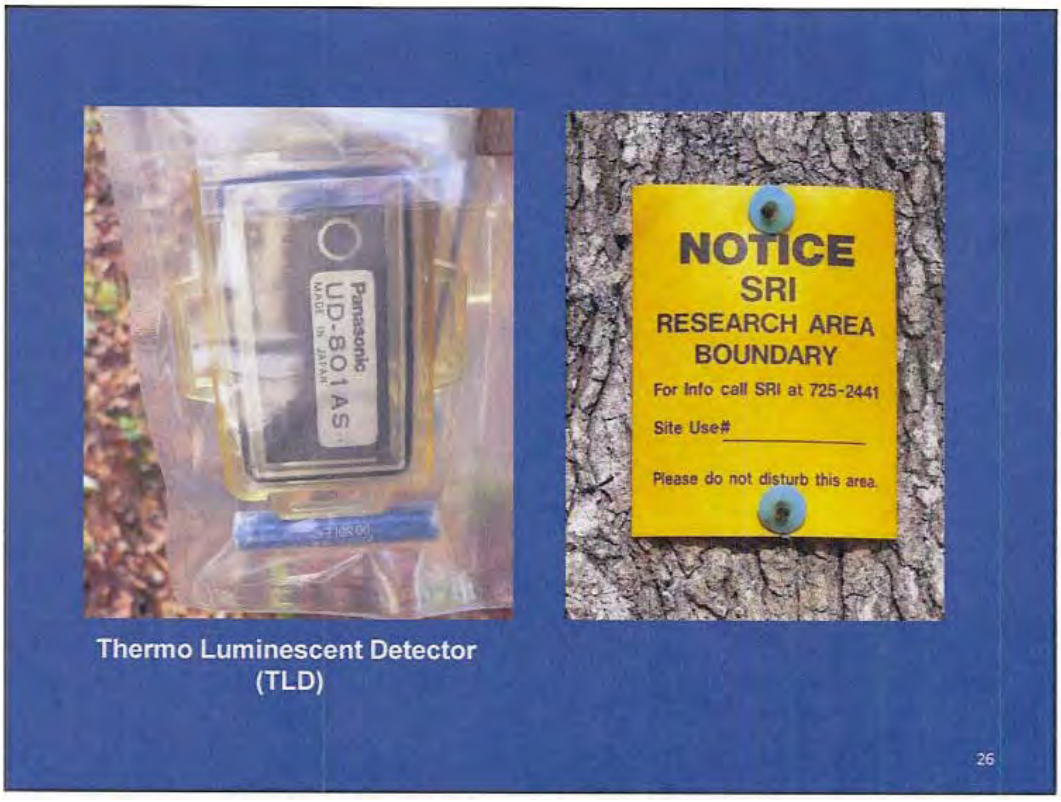
Radiological Buffer Area



Decommissioned Reactor

24


RESEARCH AREA
AUTHORIZED TRAFFIC ONLY
CONTROLLED STREAM
TEMPERATURE & FLOW MAY CHANGE SUDDENLY
DO NOT ENTER
Seismic Monitoring Station
25


Panasonic
UD-801AS
NOTICE
SRI
RESEARCH AREA BOUNDARY
For Info call SRI at 725-2441
Site Use#
Please do not disturb this area.
Thermo Luminescent Detector (TLD)
26

Emergency Services and Site Emergencies

Fire Prevention
Army units will adhere to daily South Carolina Fire / Burn Categories, as it pertains to blank, pyro, and smoke use.

When using blank ammunition, pyrotechincs, or spark initiating devices.
Units will provide pioneer tools, at least 2 each Shovels, Pick/Mattox, and Axe while in an occupied status on SRS.

[redacted], regardless of size, to FGRC-SRS by

[redacted]ntact SRSOC immediately by turning the [redacted]or calling SRSOC by phone.

27

Emergency Services and Site Emergencies

Law Enforcement
DOE-SR Law Enforcement (LE), (to include appropriate civilian law enforcement agencies) will exercise jurisdiction over the enforcement, investigation, and prosecution of criminal activity involving DOE-SR personnel / property and Army units on any portion of DOE-SR land.

DOE-SR will not become involved with internal unit criminal offenses that occur specifically in training areas set aside for the military that do not involve DOE-SR employees or property.

Accident and Crime Scene Investigation
Army units and DOE-SR will act cooperatively to investigate, issue appropriate citations, and prosecute criminal activity committed by the Army and involving DOE-SR on any DOE-SR land.

DOE-SR law enforcement will act as the lead enforcement and investigative agency for all misdemeanor level offenses committed by the military on any DOE-SR lands which involve Site property and/or employees.

28

Emergency Services and Site Emergencies

Army requests for DOE-SR Fire Department or Law Enforcement Support

All Emergency Response requests will go through SRSOC

Army units will contact FGRC-SRS, first, to report fires and law enforcement issues if time permits.

Army units may request immediate DOE-SR fire department or LE support to report fires or law enforcement issues.

29

Emergency Services and Site Emergencies

Army requests for DOE-SR Fire Department or Law Enforcement Support

FGRC-SRS Operations personnel (and Army Units) may respond to the scene and act as First Responders if safe to do so until DOE-SR EMS arrives.

Do not interfere with DOE-SR emergency response personnel.

All training activities cease until the emergency event has been successfully mitigated by emergency response personnel.

30

Emergency Services and Site Emergencies

Army training units response to site emergencies

For Site Emergencies, Fort Gordon Range Control and all training units fall under control of DOE-SR SRSOC until the "All Clear" is given.

- Operational emergencies
  - Chemical / Radiological
- Severe Weather
  - Lightning
  - Tornados
  - Floods
- Security emergencies
- Lost Soldiers
- Downed Aircraft
- Plant Vogtle

Army Actions and Response

✓ Cease all training activities.

✓ Units acknowledge emergency.

✓ Account for all personnel.

✓ Follow all emergency instructions from SRSOC.

✓ Evacuation response by Army units are critical for operation emergencies.

31

Environmental Protection of SRS

Army Environmental Protection and Responsibilities

Fort Gordon Range Control – Savannah River Site (FGRC-SRS) and the Army unit training on SRS is responsible for ensuring all training is conducted so as not to damage, pollute, or contaminate DOE-SR natural habitats and environments.

1:50,000 Scale Military Map

Will identify endangered and protected species of plants and animals at SRS. As well as the following:

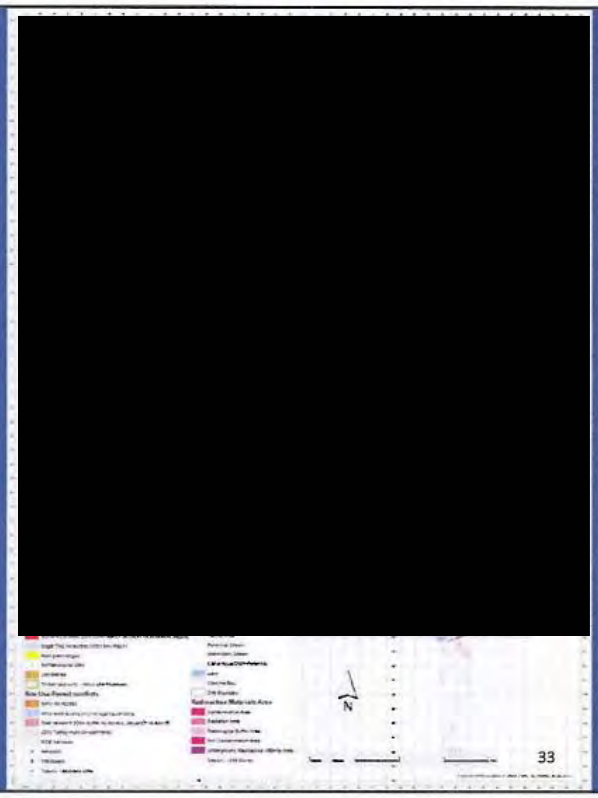
- Refueling operations
- Off limits areas
- Restricted Areas
- Contaminated Areas

Environmental Field Data Card which is a hip pocket version of military map.

32

Environmental Protection of SRS

Each units will be issued an Environmental map which will Address:
- Threatened and endangered Species
- Hazards and restrictions.
- Archeological sites.
- Contamination.



Environmental Protection of SRS

Red Cockaded Woodpecker

- Training activities around RCW habitat are different on SRS as compared to approved Federal Fish and Wildlife, Army guidelines.
- No training within 200' of RCW buffer zones. This includes blank weapons fire and pyrotechnics.
- Military vehicles may transit through BZs on existing roads. Do not stop.
- Foot traffic may transit through BZs. Do not stop.
- SRS RCW trees marked with a single white or yellow band. Do not disturb these trees.

34

Environmental Protection of SRS

Wood Stork

- Identified by dark, scaly heads, and curved billed. Trail edges of wings are black.
- Wood storks known to forage on SRS. There are no known nests.
- Forage habitat primarily swamps, wetlands, shallow ponds.
- Forages for food by pushing its bill through the water locating fish and aquatic wild life.
- Wood storks nest only in trees.
- Do not disturb wood storks.
- Report sightings to the Fort Gordon Range Control Training Facility Coordinator immediately.

35

Environmental Protection of SRS

American Bald Eagle

- 2 known nests on SRS. Bald eagles forage primarily out of L-lake and PAR Pond.
- No training within bald eagle territorial management zones (TMZ)
- Vehicles and foot traffic may transit on Road B through the TMZ.
- Aircraft should avoid flying over or through Eagle TMZs. Maintain a minimum 1000 foot altitude if the aircraft flight path cannot avoid the TMZ.
- Do not disturb bald eagles or nest.
- Report sighting to the FGRC-TFC.

36

Environmental Protection of SRS

Short Nosed Sturgeon

- Sturgeon only inhabit the Savannah River.
- No training on the river from Feb. – April due to spawning season.
- Subsurface training authorized. No underwater detonation of training pyrotechnics.
- Surface use of blanks and pyrotechnics authorized. Units will contain brass and residue inside boats and aircraft.
- No POL products will be introduced into the Savannah River from water craft.
- Do not disturb short nosed sturgeon.

37

Environmental Protection of SRS

American Alligator

- Alligators are found on the Savannah River, and all wetlands, lakes, ponds, and streams on SRS.
- Do not disturb alligators.

38

Environmental Protection of SRS

Smooth Purple Coneflower

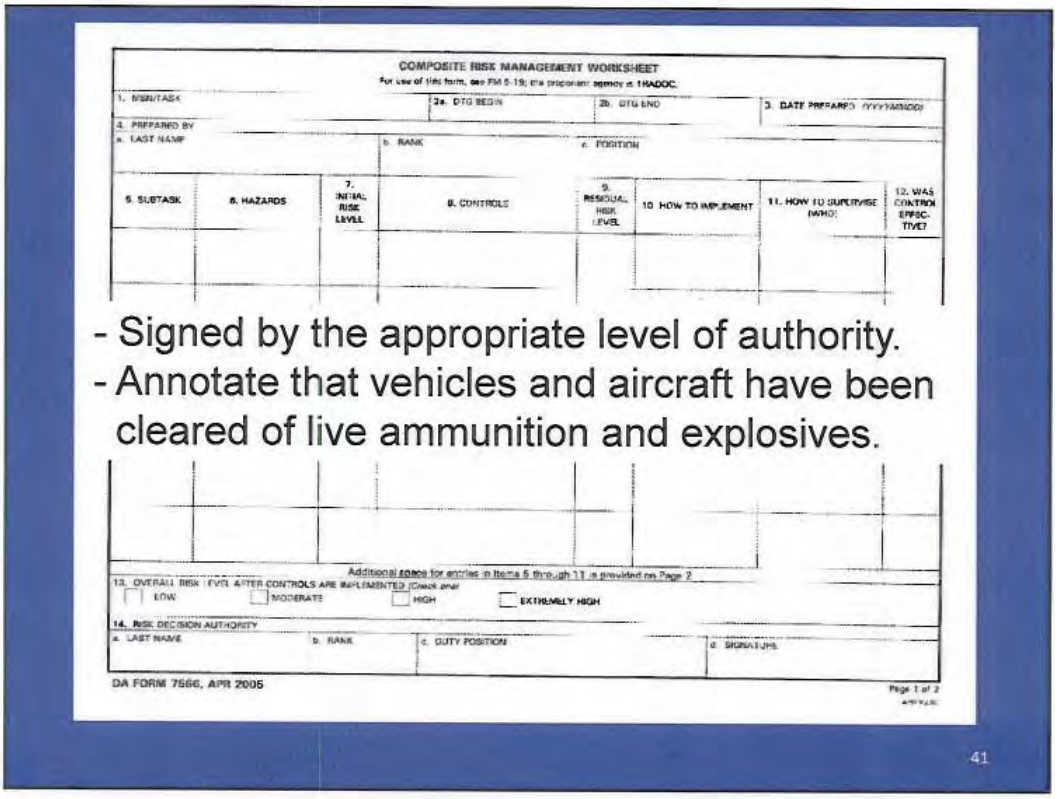
- 3 Populations of the coneflower exist on SRS. Only 1 location could be affected.
- Military vehicles restricted from accessing Sand Box road adjacent to the marked plot.
- All coneflower locations marked with signs and possibly yellow chains and poles.
- Coneflowers found in open areas; ie., power line open areas and fields.
- Stay out of these locations if you think its a Smooth Purple Coneflower plot.
- Report finding this plant to the FGRC-TFC.

39

Environmental Protection of SRS

- 1 Population of the Pondberry exists on SRS near a Carolina Bay.
- Military training will be directed away from the Pondberry location.
- This Pondberry location is marked with signs and possibly yellow chains and poles.
- Pondberry inhabitat wet areas, typically Carolina bays, swamps, and locations with poor drainage.
- Stay out known Pondberry locations.
- Report finding this plant to the FGRC-TFC.

40



Ammunition and Handling

- No lethal ammunition or CS Gas authorized on SRS.
- Units submit types of ammunition to be used on SRS through the FGRC-TFC by memorandum or DA Form 581.
- Colored smoke is authorized.
- DMC, UTM, paint ball types of ammunition is authorized.
- Ammunition holding areas will be established by the unit. Fires extinguishers and pioneer tools must be present.
- Ammunition not authorized to be stored on vehicles unless its part of the training event / load plan.
- Units will follow daily fire / burn category for use of pyrotechnics and blanks.
- Ammunition vehicles will be marked with appropriate HAZMAT signs.

42

Medical Support

- Each training unit will provide internal medical support. Combat Lifesavers, Medics (68W), Army surgeons, or similar medical personnel are authorized.

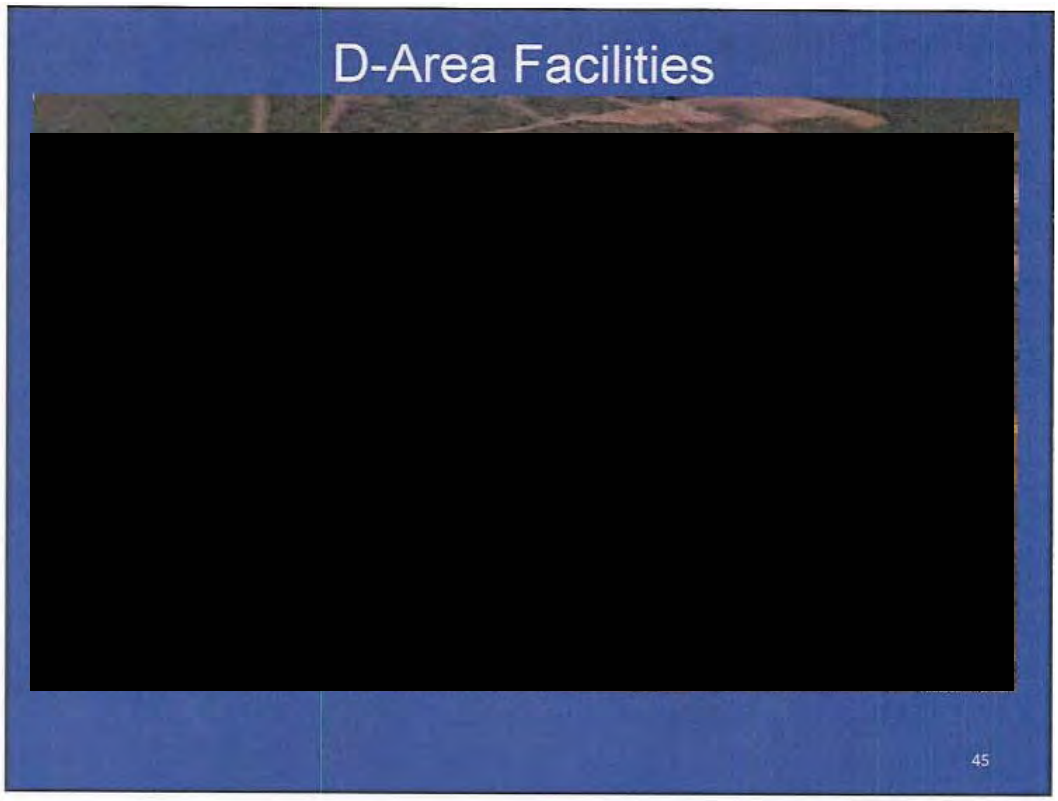
- Must have the following:
  a. Medical support must have documentation as proof of medical training.
  b. Dedicated patient transport vehicle.
  b. Sufficient Litters.
  c. Aid Kits or CLS Bags.
  d. Communications with OIC and RSO.
  e. Strip maps to local hospitals.
  f. SRS Map.
  g. DOE MEDEVAC Request Checklist.

- Barnwell County Hospital is the MEDVAC Location.

- Units may preposition "Army" aerial MEDEVAC helicopters on SRS.

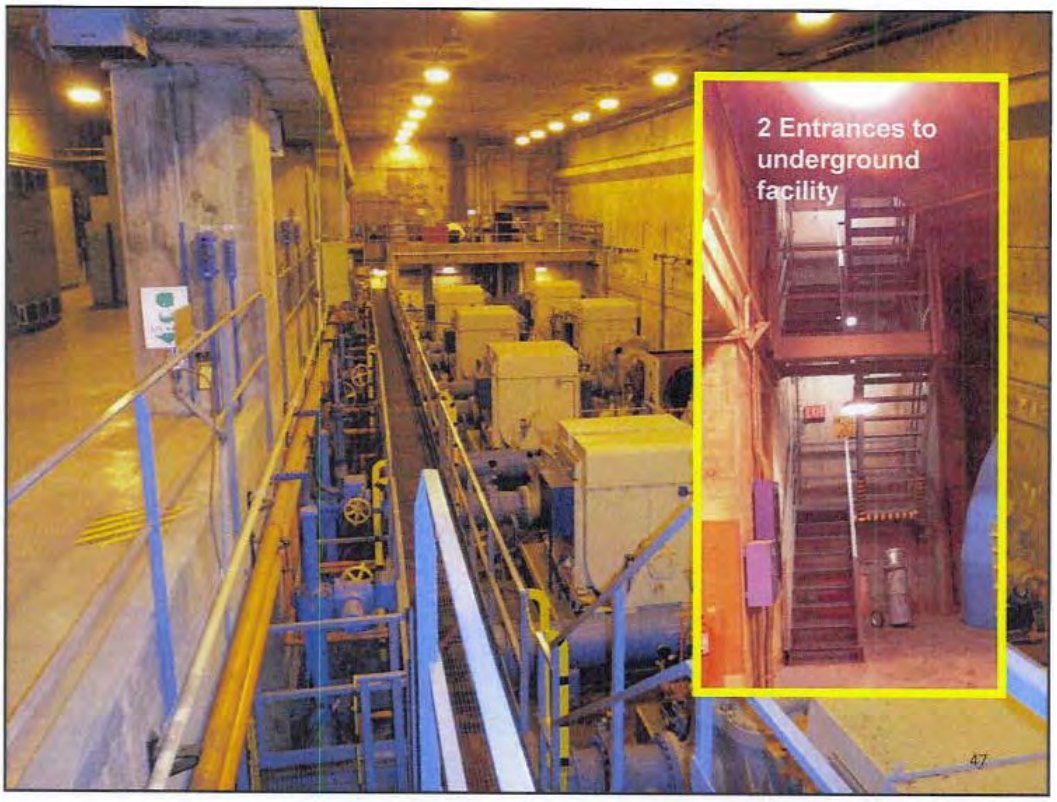
- Units may request DOE-SR aerial MEDEVAC support. However, DOE SRSFD will triage the patient before the injured person is evacuated.

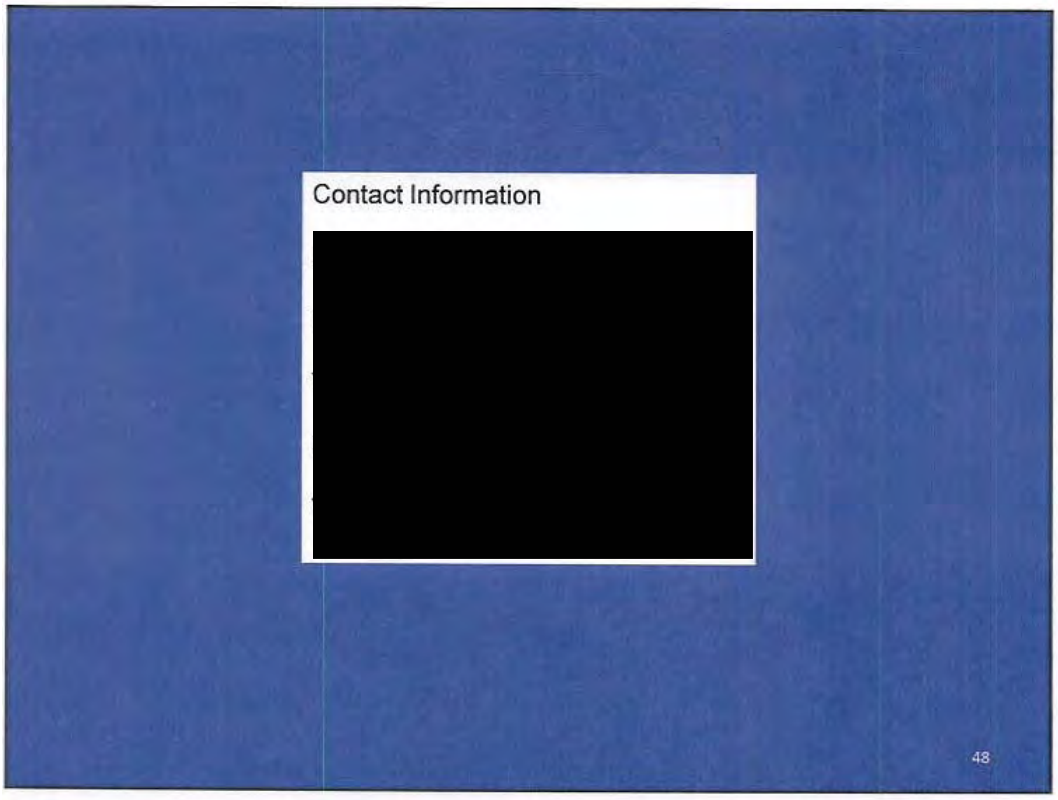
43


D-Area Facilities
[redacted]
45


46

APPENDIX – A
Unit Orientation Briefing (Cont.)





Appendix B

Savannah River Site Facility and Training Area Occupation Checklist

This checklist will be used by the Fort Gordon Range Control – Training Facility Coordinator (FGRC-TFC) to coordinate, facilitate, and track each individual units scheduled training event.

1. Initial Coordination Date and POC of the Unit: _____.

2. Date FGRC-TFC issued 90 Day Unit Coordination Packet. The Unit Coordination Packet was issued to…_____.

3. Date of 60 Day Unit scheduling and coordination meeting and location.
   _____

   Attendees: _____

4. Date of 30 Day Unit Coordination Packet required to be returned to the TFC.
   _____

Complete	YES	NO
Personnel Roster and or Flight Manifest	_____	_____
Equipment List	_____	_____
Training Ammunition List	_____	_____
Access and Egress Points	_____	_____
Aviation MOU – Ammunition Clearance Statement	_____	_____
SRS Aviation Overflight Approval Request	_____	_____
Composite Risk Assessment Form signed by Bn. Cdr.	_____	_____

5. Date Trash Dumpsters and Port-a-lets were requested and scheduled:
   _____ .

   Request sent through SRNS
   POC:_____ .

   Location of dumpsters or trash points:
   _____ .

   Locations of Port-a-lets _____ .

6. Date Communication Equipment Issued to unit /
   POC:_____ .

Final Coordination Meetings

7. Date SRSOC Briefed:
   _____ .

8. Date SRSOC Remote Worker Program Briefed:
   _____ .

9. Date USFS Briefed:
   _____ .

10. Date DOE-SR Briefed:
_____ .
11. Date of Unit inspection location(s), prior to accessing SRS:_____ .

12. Pre-inspection Date of TAs/facilities by FGRC-SRS Operations:_____.

Deficiencies Found:_____

Savannah River Site - Daily Unit Occupation Checklist

Unit:_____ Dates of Training From:_____ To: _____

Training Areas and Facilities Occupied:_____

OIC Name:_____ RSO Name:_____

Medic(s)/CLS(s) Names:_____

Number of Personnel:_____ Number of Vehicles:_____ Number of Aircraft:_____ Outside Temp: _____

1. Current USFS-SRS Fire/Burn Category: Class I____; Class II____; Class III____; Class IV____; Class V_____

2. Time of Radio Check with SRSOC:_____

Unit Call Sign(s):_____

BEFORE OPERATIONS CHECKS

	YES	NO
3. DA Form 1594 Present. Hot Time_____	___	___
4. Safety Briefing provided to soldiers as required.	___	___
5. Medic Support		
a. Medic or CLS with Certification.	___	___
b. Patient Transport Vehicle; covered and marked.	___	___
c. Dedicated Driver.	___	___
d. Strip Map to local Hospital.	___	___
e. Communications on board.	___	___
f. Litter and Aid Bag.	___	___
6. Parked Tactical Vehicles, Generators, and other motor equipment must have Drip /Drain		
a. Pans underneath engine.	___	___

7. Ammunition Holding Area (AHA).
   a. Triple Strand Concertina Wire perimeter must be established around the AHA. ___ ___
   b. 6” clearance / separation from the ground and ammo. ___ ___
   c. Guard force; 1 Sergeant of the Guard (SOG). ___ ___
   d. No smoking signs posted within 50 feet of AHA. ___ ___
   e. All ammunition must be separated by type and DODIC. ___ ___
   f. Dry foliage removed from around AHA. ___ ___
   g. Trash and excess dunnage removed as required. ___ ___
   h. Covered with water proof tarp. ___ ___
   i. 2 Each, 10 Lbs. ABC Rated, Dry Chemical Fire Extinguishers. ___ ___
   j. Pickaxe (Mattocks), Axe, and Shovel near AHA. ___ ___

8. OIC / RSO Present, not participating in training. Communications Present. ___ ___

DURING OPERATIONS CHECKS YES NO

9. Port-a-lets clean and free of debris. ___ ___
10. TAs and facilities free of trash and dunnage. ___ ___
11. Roads crossings free of dirt and soil. ___ ___
12. Expend training ammunition, pyro, duds, cleared from TAs. ___ ___
13. Found maneuver damage corrected by the using unit as soon as available. ___ ___
14. FARPs / Fuel Points:
    a. Sufficient Fire Extinguishers present.
    b. Drip / Catch Basins used under fuel nozzles and dispensers. ___ ___
15. OIC / RSO Present, not participating in training. Communications Present. ___ ___

AFTER OPERATIONS CHECKS / CLEARANCE YES NO

16. Maneuver damage corrected by unit. ___ ___
17. All vehicles and equipment removed from SRS. ___ ___
18. Facilities sweep, trash removed, cleared, damage repaired. ___ ___
19. Ammunition dunnage removed from SRS ___ ___
20. POL Spills removed. ___ ___
21. Training devices and aids removed from training lanes. ___ ___

FOR RANGE CONTROL USE
ISSUED BY _____ DATE _____ LMR#_____ RANGE INSPECTOR _____ DATE OF INSPECTION _____
RANGE INSPECTORS COMMENTS

Type of Ammunition by DODIC	Total Rounds Fired

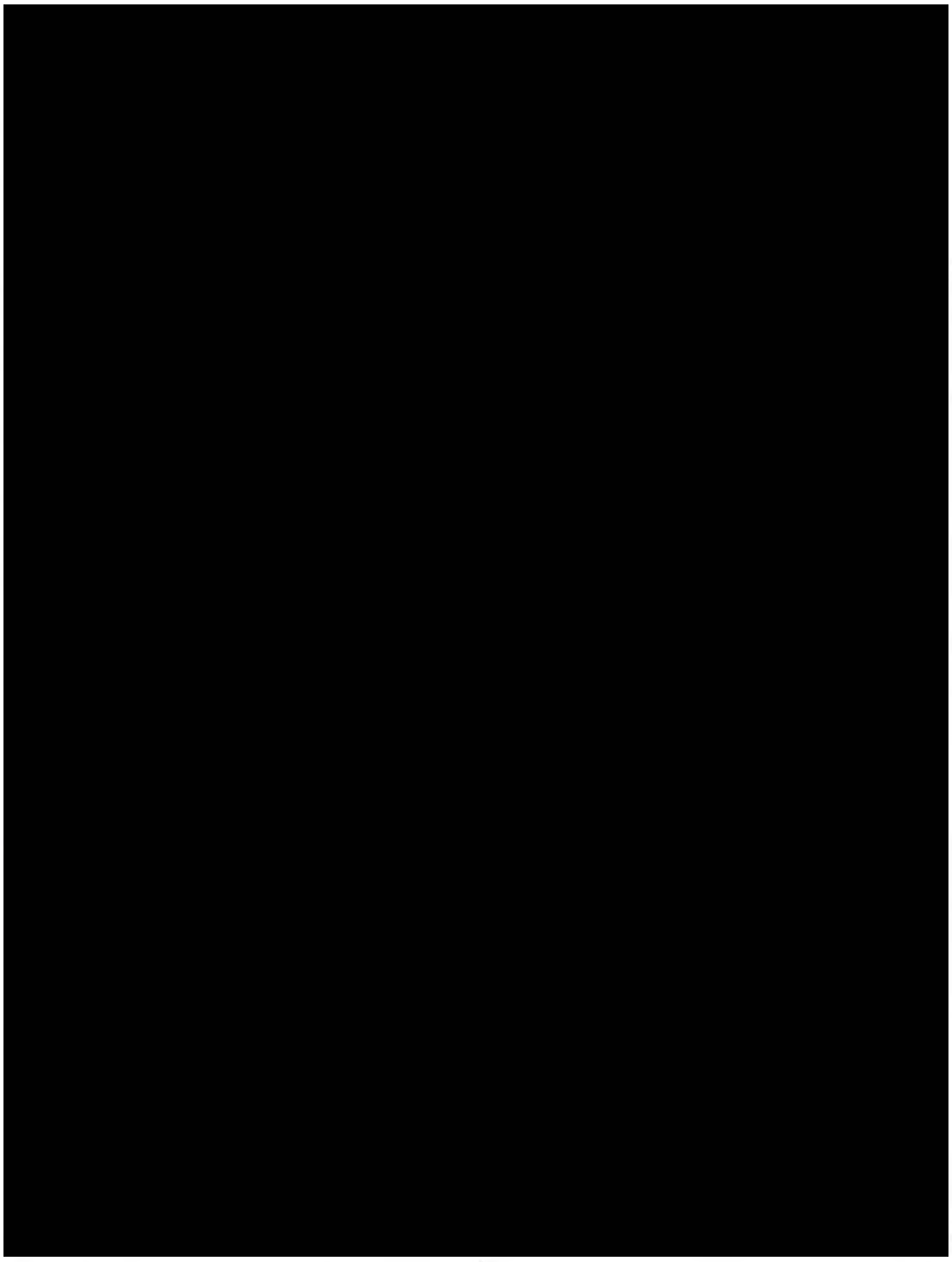
RG/TA CLEARED BY_____ DATE _____

TURNED IN TO _____ DATE _____

Appendix C
USFS-SR and Fort Gordon Range Control
Forest Fire Danger Rating

FOREST FIRE DANGER RATING	**OPERATIONAL INFORMATION**
CLASS I (GREEN) LOW DANGER	Low threat of fires starting or spreading. RANGES: No restrictions. NA for DOD units. TRAINING AREAS: No restrictions on pyrotechnics (pyro) and smoke. HE HAND GRENADE RANGE / EOD: No restrictions. NA for DOD units.
CLASS II (BLUE) MODERATE DANGER	Fires possible, controlled easily. RANGES: No restrictions. NA for DOD units. TRAINING AREAS: Pyro and smoke under observation at time of detonation. HE HAND GRENADE RANGE / EOD: No restrictions. NA for DOD units.
CLASS III (YELLOW) HIGH DANGER	Fires easily started; may be difficult to contain. RANGES: No restrictions. NA for DOD units TRAINING AREAS: Deploy pyro and smoke only in areas cleared of dry vegetation down to bare soil, within a diameter of 5 meters or more. Deployed by hand or emplaced. Deployment prohibited if winds become more than 15 mph. A fire watch should be posted for a minimum of 5 minutes after detonation. HE HAND GRENADE RANGE / EOD: No restrictions. NA for DOD units.
CLASS IV (ORANGE) VERY HIGH DANGER	Sparks discharged by any means can ignite fires and spread rapidly. Fire suppression difficult. RANGES: Possible tracer restriction. NA for DOD units TRAINING AREAS: Pyrotechnics restricted to hand deployed simulators and smoke. Deploy pyro and smoke in areas cleared of dry vegetation down to bare soil within a diameter of 5 meters or more. Simulators will be prohibited if winds become more than 10 mph. A fire watch should be posted for a minimum of 5 minutes after detonation. HE HAND GRENADE / EOD: Ensure impact zone is cleared of dry vegetation. A Fire watch is posted a minimum of 25 minutes after completion of training.
CLASS V **(RED)** EXTREME FIRE DANGER	Extreme fire behavior expected. Fires will start from any flash or spark. Fire suppression efforts may not be effective. RANGES: Tracer restricted; ball ammo only. NA for DOD units TRAINING AREAS: No pyrotechnics of any type. HE HAND GRENADE / EOD: deployment permitted only if impact zone cleared of dry vegetation. A fire watch should be posted for a minimum of 30 minutes after the detonation. DOD Units restricted from deployment of CS Gas.

Appendix D
SRS Aircraft Overflight Approval Request Form



Appendix E
Ammunition Holding Area Checklist

The OIC or RSO is responsible for ensuring the Ammunition Holding Area is properly established and maintained daily.

Units will not use vehicles as an established ammunition supply point. Ammunition may be stored on vehicles if part of the load plan, secure, and part of the training event.

	YES	NO
1. Triple Strand Concertina Wire perimeter established around the AHA.	___	___
2. 6” clearance / separation from the ground.	___	___
3. Guard.	___	___
4. No smoking within 50 Feet signs posted.	___	___
5. All ammunition must be separated by type and DODIC.	___	___
6. Dry foliage removed from around AHA.	___	___
7. Trash and excess dunnage removed as required.	___	___
8. Covered with water proof tarp.	___	___

Appendix F
Unit Coordination Packet Memo

Office Symbol Submission Date

MEMORANDUM To (addressed to Unit POC)

MEMORANDUM From the Fort Gordon Training Facility Coordinator (TFC)
Donald S. McLean

SUBJECT: Unit Coordination Packet

Purpose

1. To provide the necessary training requirements to the training unit that must accomplished prior to access of the Savannah River Site, Aiken, SC.

2. This Packet, once completed and returned to the TFC, will be used to brief the Department of Energy – Savannah River Operations Office (DOE-SR) on the units training intent.

3. This packet must be returned no later than (NLT) 30 working days prior to the start of training.

4. Asterisks indicate information that may be submitted by the TFC in lieu of the unit.

5. The TFC is responsible for submitting the completed Unit Coordination Packet to the DOE-SR Integration and Planning Coordinator.

a. Personnel Roster / Flight Manifests

A Unit Personnel Roster and or Flight Manifest of all soldiers accessing SRS. This includes Department of Army civilians (DAC) and contractors. Listed personnel will include full name, social security number, rank, and employer if DAC / contractor.

Example:

Name	Rank	Last 4# SSN	Employer
Doe, John	LTC	123-45-6789	Regular Army
Downs, Rachael	SSG	123-45-6789	Regular Army
Johnson, Michael		123-45-6789	General Dynamics

Additions to rosters may be submitted up to 3 working days prior to the first day of the unit accessing SRS. Deletion of names is permitted at any time.

* **b. Equipment**

Type(s) of equipment unit will train with. Total amounts not required. Worn equipment such as Kevlar, LBE, body armor not required as part of this list. Tracked vehicles prohibited.

Example:
CH-47 Chinooks
M998 HMMWV Cargo / Troop Carrier

M1038 HMMWV Cargo / Troop Carrier
LMTV A1 Cargo
MKTs
M2 HB Machine Gun
M16s

* **c. Training Ammunition (Ball and other Lethal types of ammunition and pyrotechnics not authorized on SRS.)**

Units may submit a copy of DA Form 581 Request for Issue and Turn-in of Ammunition, or, memorandum listing ammunition by type and DODIC.

d. DA Form 7566-R Composite Risk Assessment

Signed by the Battalion Commander if blank ammunition or pyrotechnics are to be used. The Battalion Commander's designated representative is authorized to sign with assumption of commander orders.

Note: Annotate on CRM that all personnel, vehicles, and aircraft will be inspected for presence of ammunition prior to accessing SRS.

Note: Annotate on CRM that all personnel have received the SRS Orientation briefing.

e. SRS Overflight Request Form

Signed by lead pilot or senior ranking officer coordinating air mission / corridors.

6. POC this action is Donald S. McLean, [redacted], @ [redacted].

[redacted]

Appendix G
SRS Aerial MEDEVAC Request

9 Line Air MEDEVAC Request for DOE-SR Aviation Support

1. OIC or RSO Effect a “Cease training,” on internal Army FM Radio Frequencies.

For immediate Air MEDEVAC, contact Fort Gordon Range Control-SRS using hand held radio immediately with incident and injuries.

Immediately send as much information to FGRC-SRS, follow up with 9 line MEDEVAC Request.

If at any time FGRC-SRS cannot be contacted by radio.

Turn the handheld radio dial to [redacted] and transmit request directly to SRSOC.

2. Medic: Treat and evaluate soldier. Move soldier to designated LZ. Continue to treat patient until DOE Aircraft arrives.

3. OIC: Ensure 9 line Aerial MEDEVAC Request is received by FGRC-SRS. If FGRC-SRS cannot be contacted by radio. Turn handheld radio dial to channel 16 and transmit request directly to SRSOC.

4. Provide 9 Line MEDEVAC information.

5. Provide Range Control and Incident Report within 24 hours of incident.

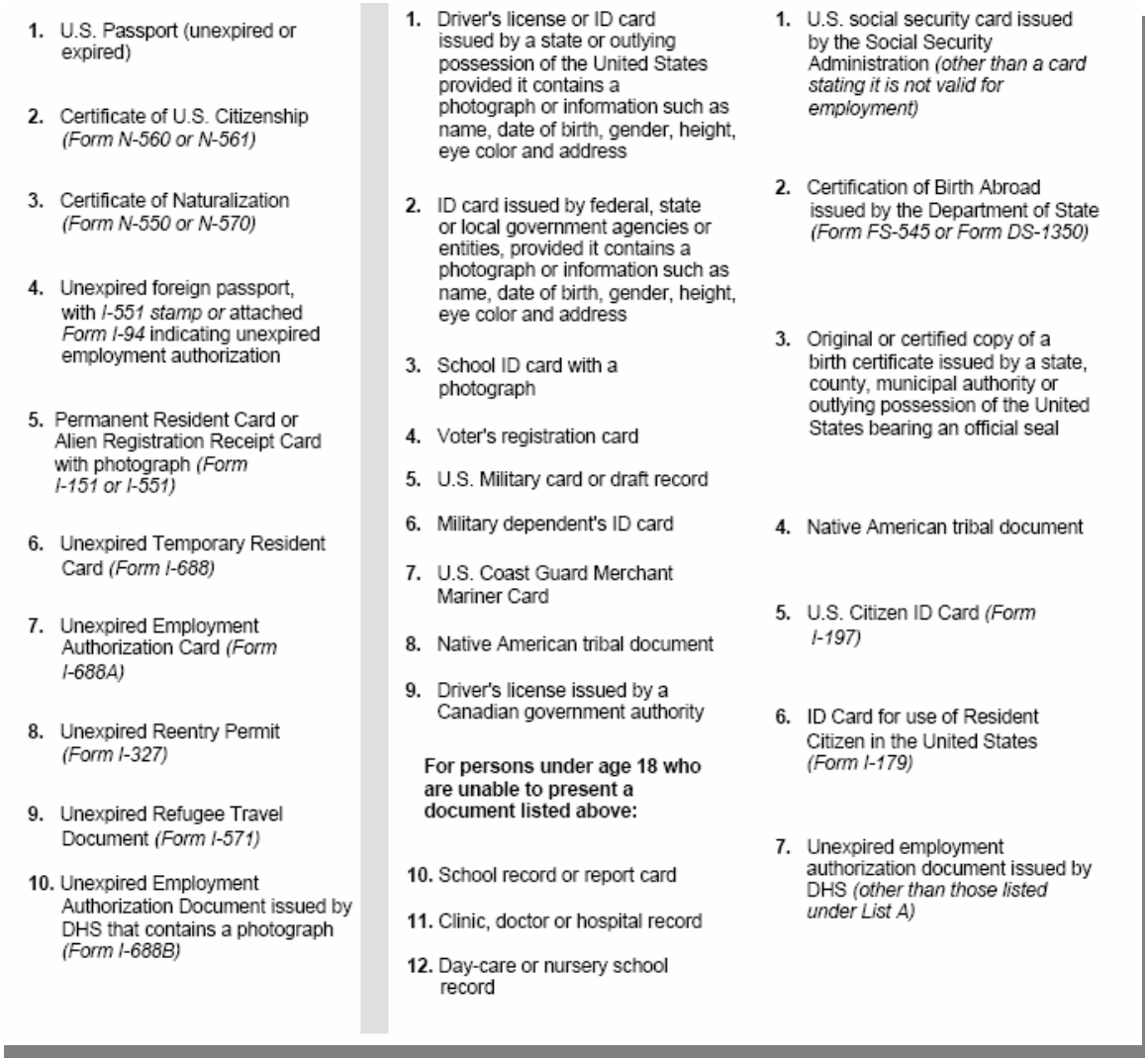
Air MEDEVAC Requests will be rehearsed with the OIC, RSO, and Army Medical support prior to training commencing.

Appendix G
SRS Aerial MEDEVAC Request (Cont.)

Line 2	Radio frequency, call sign, and suffix.	Not applicable
Line 3	Number of patients by precedence: A - Urgent B - Urgent Surgical C - Priority D - Routine E – Convenience	 NAME, RANK, and UNIT of PATIENT(S)
Line 4	Special equipment required: A - None B - Hoist C - Extraction Equipment D – Ventilator	 Description of Injuries
Line 5	Number of patients: A - Litter B – Ambulatory	
Line 6	Pick-up site specific information:	
Line 7	Method of marking pick-up site: A - Panels B - Pyrotechnic signal C - Smoke signal D - None E – Other	
Line 8	Patient nationality and status: A - US Military B - US Civilian C - Non-US Military D - Non-US Civilian E – EPW	
Line 9	NBC Contamination: N - Nuclear B - Biological C - Chemical * In peacetime - terrain description of pick-up site.	

Appendix H
Approved Forms of Identification

When processing for temporary badges on SRS, these are approved forms of identification that may be presented as proof of identity.



List A

1. U.S. Passport (unexpired or expired)
2. Certificate of U.S. Citizenship *(Form N-560 or N-561)*
3. Certificate of Naturalization *(Form N-550 or N-570)*
4. Unexpired foreign passport, with *I-551 stamp or* attached *Form I-94* indicating unexpired employment authorization
5. Permanent Resident Card or Alien Registration Receipt Card with photograph *(Form I-151 or I-551)*
6. Unexpired Temporary Resident Card *(Form I-688)*
7. Unexpired Employment Authorization Card *(Form I-688A)*
8. Unexpired Reentry Permit *(Form I-327)*
9. Unexpired Refugee Travel Document *(Form I-571)*
10. Unexpired Employment Authorization Document issued by DHS that contains a photograph *(Form I-688B)*

List B

1. Driver's license or ID card issued by a state or outlying possession of the United States provided it contains a photograph or information such as name, date of birth, gender, height, eye color and address
2. ID card issued by federal, state or local government agencies or entities, provided it contains a photograph or information such as name, date of birth, gender, height, eye color and address
3. School ID card with a photograph
4. Voter's registration card
5. U.S. Military card or draft record
6. Military dependent's ID card
7. U.S. Coast Guard Merchant Mariner Card
8. Native American tribal document
9. Driver's license issued by a Canadian government authority

For persons under age 18 who are unable to present a document listed above:

10. School record or report card
11. Clinic, doctor or hospital record
12. Day-care or nursery school record

List C

1. U.S. social security card issued by the Social Security Administration *(other than a card stating it is not valid for employment)*
2. Certification of Birth Abroad issued by the Department of State *(Form FS-545 or Form DS-1350)*
3. Original or certified copy of a birth certificate issued by a state, county, municipal authority or outlying possession of the United States bearing an official seal
4. Native American tribal document
5. U.S. Citizen ID Card *(Form I-197)*
6. ID Card for use of Resident Citizen in the United States *(Form I-179)*
7. Unexpired employment authorization document issued by DHS *(other than those listed under List A)*

Appendix I
Policies and Procedures for Determining Costs, Billing, and the Transfer of Funds from the Army to DOE-SR

Section A. General

The DOE mission is primary and will not be compromised by military training activities. The cost of doing DOE missions is the responsibility of DOE. The Army is responsible for reimbursing DOE for incremental costs that are the result of Military training activities at the Site. This appendix outlines the process and policies for determining what constitutes appropriate incremental costs and the process for reimbursement. For the most part, the terms "Army" and "military" are not overarching references to the military in general. Rather they refer to individual units of the military that are autonomous for training activities. While following one overarching process described in this JSOP, each training activity is an independent, discrete exercise conducted according to individually approved training plans.

Section B. Identification of Services

It is possible that multiple Site organizations, potentially including either or both Government and Site contractor organizations, may periodically be involved in providing a service to support a military exercise. Identification of services to be provided in support of Military training will be identified during the 90-60-30 planning process described in Chapter 3 of this JSOP. A potential exception to this would be the procurement of specialized services or technical expertise from the Savannah River National Lab (SRNL) through the Work for Others process. In these cases, the military could work directly with the SRNL through the DOE-SR Office of Laboratory Oversight. If SRNL is providing specialized services in conjunction with a military training exercise to be conducted on the SRS, the DOE-SR Office of Laboratory Oversight will work with the AMIP DOE-SR POC to assure proper coordination.

Section C. Transfer of Funds from the Military to DOE

Transfer of funds to DOE-SR will be through the Intra-Governmental Payments and Collections (IPAC) System. The Army shall provide the funding prior to the delivery of goods or performance of services. The points of contact for the approval and transfer of funds are identified in Table C-1 of this section.

Note: The process as follows utilizes the Fort Gordon Garrison Resource Management Office (GRMO) as the military organization responsible for the transfer of funds to the DOE-SR. While in some cases it may be the GRMO, for the purposes of this Appendix it serves as a place holder name in describing the general process for transfer of funds between the military and DOE-SR. In most cases the funds will be transferred from individual units for individual training exercises. As such, the official responsible for the unit's disbursement of funds will be substituted in the place of the GRMO.

Once the goods or services to be provided by SRS in support of Military training have been identified during the 90-60-30 planning process, SRS Organizations will submit a detailed description of services to be provided and the total estimated cost to the DOE–SR POC and the Fort Gordon Training Facilities Coordinator (TFC). The Fort Gordon Training Facilities Coordinator (TFC) will consolidate into a package defining the scope and proposed cost and provide to the DOE-AMIP POC. The DOE-AMIP POC, in consultation with the TFC and the training unit, will provide final approval. Upon approval, the package will be forwarded to the Contracts Management Division and the SR-Financial Evaluation Division.

Once the SR-Financial Evaluation Division has determined the estimated cost is appropriate, they will provide approval to the Contracts Management Division.

The Contracts Management Division will notify the Fort Gordon TFC that the Package is ready for processing.

The Fort Gordon TFC will notify the Fort Gordon Garrison Resource Management Office (GRMO) and

provide the data necessary for preparation of a DD Form 448, Military Interdepartmental Purchase Request (MIPR). Instructions and a MIPR example are included in Figure C-1.

The Fort Gordon Garrison Resource Management Office (GRMO) will prepare and submit to DOE-SR Contracts Management Division a DD Form 448, Military Interdepartmental Purchase Request (MIPR), which shall include but will not be limited to: the complete Army accounting classification, agency location code, detailed description of order and/or services, authorized funding, points of contact and billing information.

Once DOE-SR Contracts Management Division receives the MIPR, they shall prepare and submit to the Fort Gordon GRMO a DD Form 448-2, Acceptance of MIPR. DOE-SR shall provide a complete line of accounting and Agency Location Code (ALC) to the GRMO POC.

In the case of goods or services to be provided by a DOE contractor, the DOE-SR Contracts Management Division POC shall direct the contractor to provide goods or services IAW DOE SR contracting procedures.

DOE-SR shall not bill the Army in excess of the MIPR amount. If additional funds are required, DOE-SR shall request an amendment to the MIPR to increase the funding amount.

Billings covering reimbursements shall identify costs by each item listed in the MIPR.

Billings shall be submitted by DOE-SR Contracts Management Division prior to each training exercise, or on a monthly basis for long term services unless otherwise stated in the MIPR.

At the completion of the exercise, each organization doing reimbursable work will provide a report of the completed work in sufficient detail to allow an auditable review to the AMIP DOE-SR POC and the Fort Gordon TFC. Funds not actually obligated by the expiration date of the period of performance in the MIPR shall be returned to the Army.

In the case of cancelled training requirements, support costs not already expended will be de-obligated and returned to the Army by DOE-SR Contracts Management Division.

The Points of contact for implementing this process are a follows. Modifying or updating this list may be done as required.

[redacted]

[redacted]			
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]	[redacted]	[redacted]
[redacted]	[redacted]		

Figure C-1 MIPR Instructions

MIPR INSTRUCTIONS

DD FORM 448-2 - MIPR Acceptance - The attached **DD FORM 448-2** must be fully **COMPLETED** and returned to this office, **DESC-RBF**, within **30 days** after the date in Block 17. You must **INDICATE** in Block 6 which **type** Acceptance you prefer. **Note:**

❶ If we do not receive the Acceptance within the requested 30 days, a letter will be sent to you as a reminder. If we have not received the "Acceptance" within 60 days

☆WE WILL WITHDRAW THE FUNDING !

❷ "Acceptance" must include **(1)** Point of Contact **(2)** Fax Number **(3)** Phone Number **(4)** E-mail Address **(5)** Government Representative for Invoice Certification

❸ **Fax "Acceptance" to DEFENSE ENERGY SUPPORT CENTER (D**
DO NOT mail your original.

REIMBURSABLE FUNDING (Category I): Submit SF 1080 or equivalent billings, with supporting documents, to the address below. If your invoice includes multiple MIPRs, you MUST annotate the amounts billed on each MIPR number. DFAS point of contact for reimbursable funding is Mary Kay Michel, DSN 869-1898, or comm (614) 693-1898. Your documents **must** include:

- ✓ MIPR number
- ✓ Total funds authorized
- ✓ Cumulative bills to date
- ✓ Current amount due
- ✓ EXACT Accounting Citation in Block 14 of the MIPR
- ✓ Total costs accrued to date
- ✓ Service period
- ✓ Mark the last invoice "Final Bill"

DIRECT CITATION FUNDING (Category II): You must provide the **page** of the contract/modification or other

annotate on the contract each MIPR number with the amount obligated. The U.S. Government representative is the authorized certifying official for all invoices. **All invoices must go through your U.S.**
DFAS-CO-
mm (614)
umber and
contract line item number (shown in Block 14) are reflected on subsequent disbursement vouchers. **Note: I**
the awarded contract has both Minor Construction (5CFC) and Maintenance & Repair (5CF0) money cited, the billing address on the contract should refer to the address for the preponderant amount.
Your documents **must** include: ✓Contract Number ✓Obligated dollar amount ✓MIPR number and ✓Exact Accounting Citation in Block 14 of the MIPR

Billing Addresses:

Defense Finance and Accounting Service - Columbus Center (DFAS-CO)
Stock Fund Directorate
Fuels Accounting and Payments Division

***Reimbursable**
****Direct Cite**

Submit Final Financial status reports when the project is completed to:

ost code
ated balance

Fina

Revised 4/16/2003

Figure C-1 MIPR Instructions (cont)

Most Frequently Asked Questions

1. ***What is the true or original source of funds?***

   The Original source or "True" source of funds is the Defense Working Capital Funds (previously DBOF). These funds are issued to DESC through the Defense Logistics Agency from the Office of the Secretary of Defense. These funds are non-expiring if the accounting citation begins "97XXXX4930...." and your MIPR number is DESC-**MR**-XX-XXXX. If your MIPR number is DESC-**MC**-XX-XXXX, you have a capital MIPR which is a one-year expiring fund.

2. ***Do your funds expire?***

   No, our funds are Defense Working Capital Funds (DWCF), formerly DBOF, which do not expire, however we have to reach a yearly obligation authorization, therefore **we need the funds obligated by the end of the fiscal year**. The funds are no year funds, but we have to treat them like expiring funds.

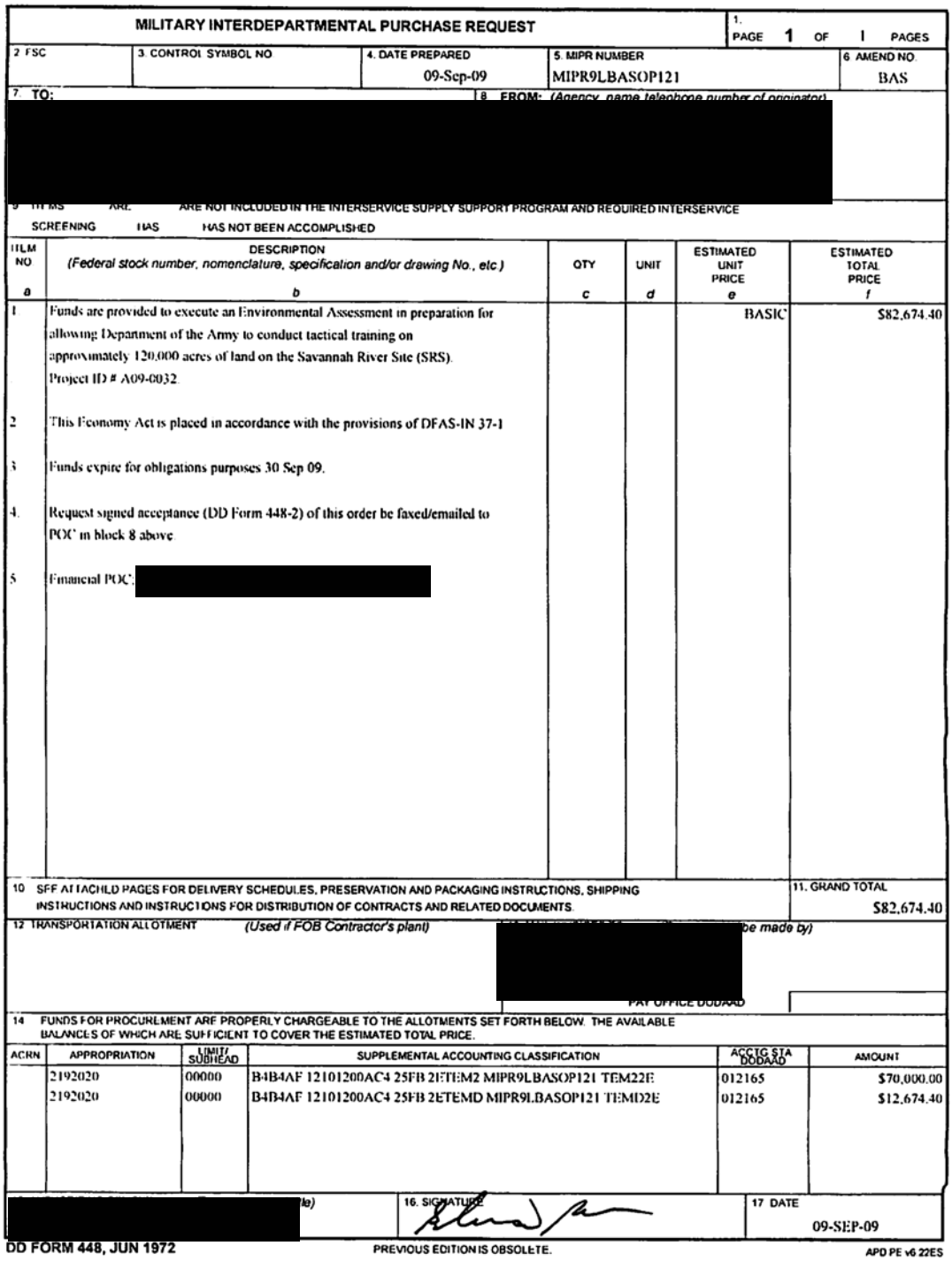
   For MIPRs that are accepted as reimbursable, if the project is on-going, you do not need to close out the MIPR at the end of the fiscal year. Being a DWCF, adjustments can be made to existing MIPRs after the fiscal year they were established.

3. ***How do I return excess funds (when the project is still open)?***

   Complete DD Form 448-2 "Acceptance." Check Block 12B and fill in the amount you will return. If your MIPR has more than one line of accounting, in block 13, "Remarks," please include the cost code the excess funds are related to. The cost code is usually the alpha code after the MIPR number in the supplemental accounting classification, for example, MR, MCON, MREP, etc.

4. ***If you have any technical questions, please contact the project manager listed on your MIPR in Block 9.***

Figure C-1 MIPR Instructions (cont)



MILITARY INTERDEPARTMENTAL PURCHASE REQUEST

1. PAGE 1 OF 1 PAGES

2. FSC	3. CONTROL SYMBOL NO.	4. DATE PREPARED	5. MIPR NUMBER	6. AMEND NO.
		09-Sep-09	MIPR9LBASOP121	BAS

7. TO: [redacted]

8. FROM: (Agency, name, telephone number of originator)

9. ITEMS ARE ARE NOT INCLUDED IN THE INTERSERVICE SUPPLY SUPPORT PROGRAM AND REQUIRED INTERSERVICE SCREENING HAS HAS NOT BEEN ACCOMPLISHED

ITEM NO. a	DESCRIPTION (Federal stock number, nomenclature, specification and/or drawing No., etc.) b	QTY c	UNIT d	ESTIMATED UNIT PRICE e	ESTIMATED TOTAL PRICE f
1	Funds are provided to execute an Environmental Assessment in preparation for allowing Department of the Army to conduct tactical training on approximately 120,000 acres of land on the Savannah River Site (SRS). Project ID # A09-0032.			BASIC	$82,674.40
2	This Economy Act is placed in accordance with the provisions of DFAS-IN 37-1				
3	Funds expire for obligations purposes 30 Sep 09.				
4.	Request signed acceptance (DD Form 448-2) of this order be faxed/emailed to POC in block 8 above.				
5	Financial POC: [redacted]				

10. SEE ATTACHED PAGES FOR DELIVERY SCHEDULES, PRESERVATION AND PACKAGING INSTRUCTIONS, SHIPPING INSTRUCTIONS AND INSTRUCTIONS FOR DISTRIBUTION OF CONTRACTS AND RELATED DOCUMENTS.

11. GRAND TOTAL $82,674.40

12. TRANSPORTATION ALLOTMENT (Used if FOB Contractor's plant) [redacted] be made by)

PAY OFFICE DODAAD

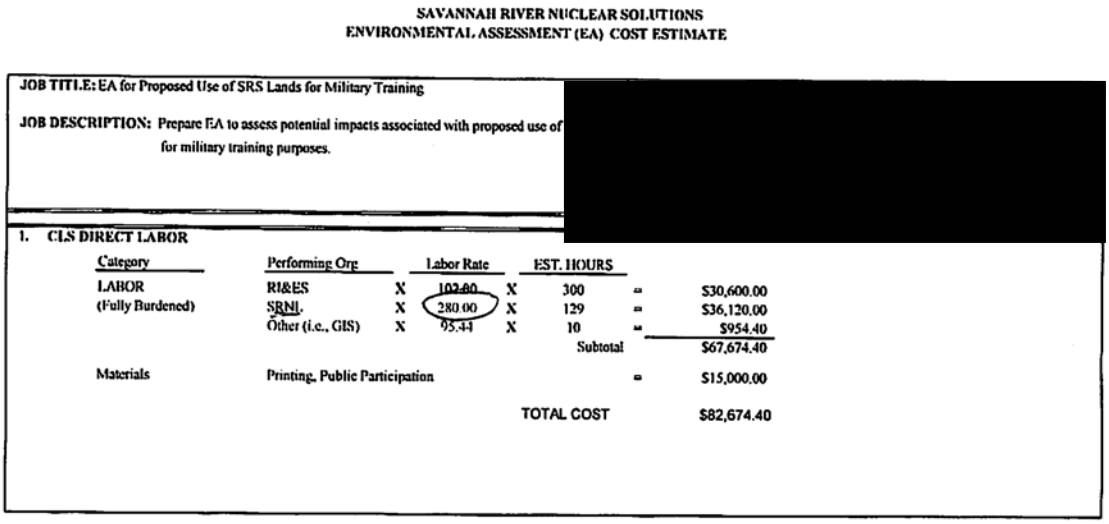
14. FUNDS FOR PROCUREMENT ARE PROPERLY CHARGEABLE TO THE ALLOTMENTS SET FORTH BELOW. THE AVAILABLE BALANCES OF WHICH ARE SUFFICIENT TO COVER THE ESTIMATED TOTAL PRICE.

ACRN	APPROPRIATION	LIMIT/ SUBHEAD	SUPPLEMENTAL ACCOUNTING CLASSIFICATION	ACCTG STA DODAAD	AMOUNT
	2192020	00000	B4B4AF 12101200AC4 25FB 2ETEM2 MIPR9LBASOP121 TEM22E	012165	$70,000.00
	2192020	00000	B4B4AF 12101200AC4 25FB 2ETEMD MIPR9LBASOP121 TEMD2E	012165	$12,674.40

[redacted] 16. SIGNATURE 17. DATE 09-SEP-09

DD FORM 448, JUN 1972 PREVIOUS EDITION IS OBSOLETE. APD PE v6 22ES

Figure C-1 MIPR Instructions (cont)



SAVANNAH RIVER NUCLEAR SOLUTIONS
ENVIRONMENTAL ASSESSMENT (EA) COST ESTIMATE

JOB TITLE: EA for Proposed Use of SRS Lands for Military Training

JOB DESCRIPTION: Prepare EA to assess potential impacts associated with proposed use of [redacted] for military training purposes.

1. CLS DIRECT LABOR

Category	Performing Org		Labor Rate		EST. HOURS		
LABOR (Fully Burdened)	RI&ES	X	102.80	X	300	=	$30,600.00
	SRNL	X	280.00	X	129	=	$36,120.00
	Other (i.e., GIS)	X	95.44	X	10	=	$954.40
					Subtotal		$67,674.40
Materials	Printing, Public Participation					=	$15,000.00
					TOTAL COST		$82,674.40

Section D. Process, Policies, and Guidelines for Determining Reimbursable Costs

Given the possibility that multiple Site organizations, including both Federal and contractor may periodically be involved in providing a service to support a military exercise, clarity and uniformity on what should be considered a reimbursable incremental costs is necessary. General guidelines for making these determinations are provided in this section. It is recognized that while initial demand is expected be low, the level of activity is expected to increase over time and the support requirements may become better defined. As that happens, the proposed reimbursement costs, applicability, and guidelines can be revisited as needed to consider adjustments at the request of either party.

A Review Team is established to determine the eligible and appropriate items for reimbursement, assure consistency among organizations, and settle disputes on appropriateness of charges. The team is composed of representatives of the DOE-SR Contracts Management Division, DOE-SR Acquisition Operations Division, DOE-SR-Finance Division, DOE-SR Budget Division, DOE-SR Projects Management Division, and the DOE-SR Mission Planning Division. The team will meet as required to conduct business and review issues. The team may request participation from other DOE organization. The DOE-SR Missions Planning Division member of the team will facilitate team activities.

The principles established in DOE O 481.1C (Work for Others) and DOE G 481.1.1-1 (Department of Energy Work for Other Guide) and DOE O 522.1 (Pricing of Departmental Materials and Services) served as the basis for determining a fair and reasonable approach in establishing these guidelines. These guidelines also consider the following mutual benefits:

- "Both (the Army and DOE)….have an interest in the protection of national security" and
- "The DOE-SR benefits by providing multiple use management on SRS land, a prudent use of federal property" as well as the potential for periodically shared training opportunities.

Reimbursable Costs Guidelines

1. Interactions for proposal development (discussing potential for an exercise, reviewing potential use of facilities) without specific measurable outcome are informal and are not measured or charged
2. There is no charge for use of facilities used in the normal mode for its primary purpose
3. When facilities are operated for special circumstances outside of their normal operating mode, charges may be assessed to recover the incremental cost.
4. The cost should be actual and definable. (for example, “provide ten port-a-potties for ten days”)
5. There shall not be a charge for access/use permits or the preparation thereof.
6. Charges shall be based on a definable work load that will result in: specific overtime or; the necessity of subcontracting the additional work or; require the addition of staff; or result in definable increments above normal work
7. If the Army elects not to make repairs for any damage resulting from an exercise (for example, vehicle ruts determined to need leveling, the cost shall be determined at the going man power and equipment rate listed in the service menu).
8. Charges should not be assessed if:

    - Action involves de minimis (insignificant) expense to the government, especially if the tracking and costing are more than the reimbursement.

    - Action does not interfere with completion of the daily duties of the employee.

    - Action is nominally within the scope of services being provided as the normal part of an employees duties and does not cause a discernable difference to the normal work load (i.e., periodically providing visitors badges that falls within the normal yearly workload of the badge office)

    - Action may change the timing of normal work, but does not change the scope of the work. For example, conducting archeological surveys that would have eventually taken place under the terms of the existing scope.

9. It is recognized that minimal incidental costs may be incurred as a result of Army activities that are not reasonable or even possible to legitimately track. As the number of training activities increase, there could be a cumulative impact, but due to the incidental nature it would still not be reasonable to try to track to determine a cumulative total incremental cost. To account for this and to minimize effort, a reasonable incidental cost formula will be developed over time to identify and cover general items. These incremental costs can then are recovered in the form of a general unit cost associated with each training exercise and eliminate the need to try to account for minimal effort.

Section E. Menu and Cost of Services

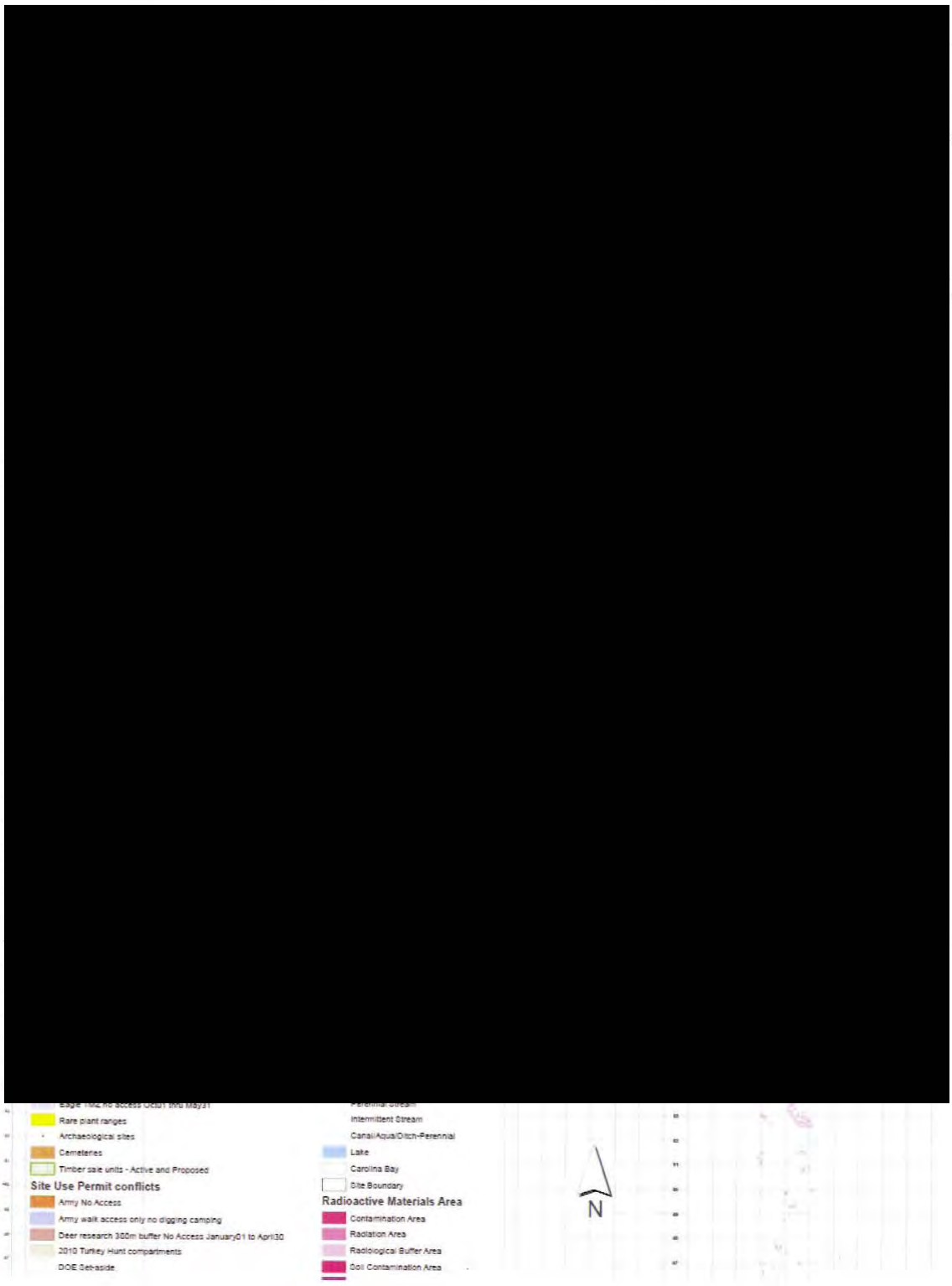
A menu of available SRS services and associated costs will be developed and provided to military units. The units can determine which, if any, of the services they may use in planning their training. The menu and costs will be updated as needed to reflect current conditions.

Appendix J
Distribution List for Notification of Military Training Activities

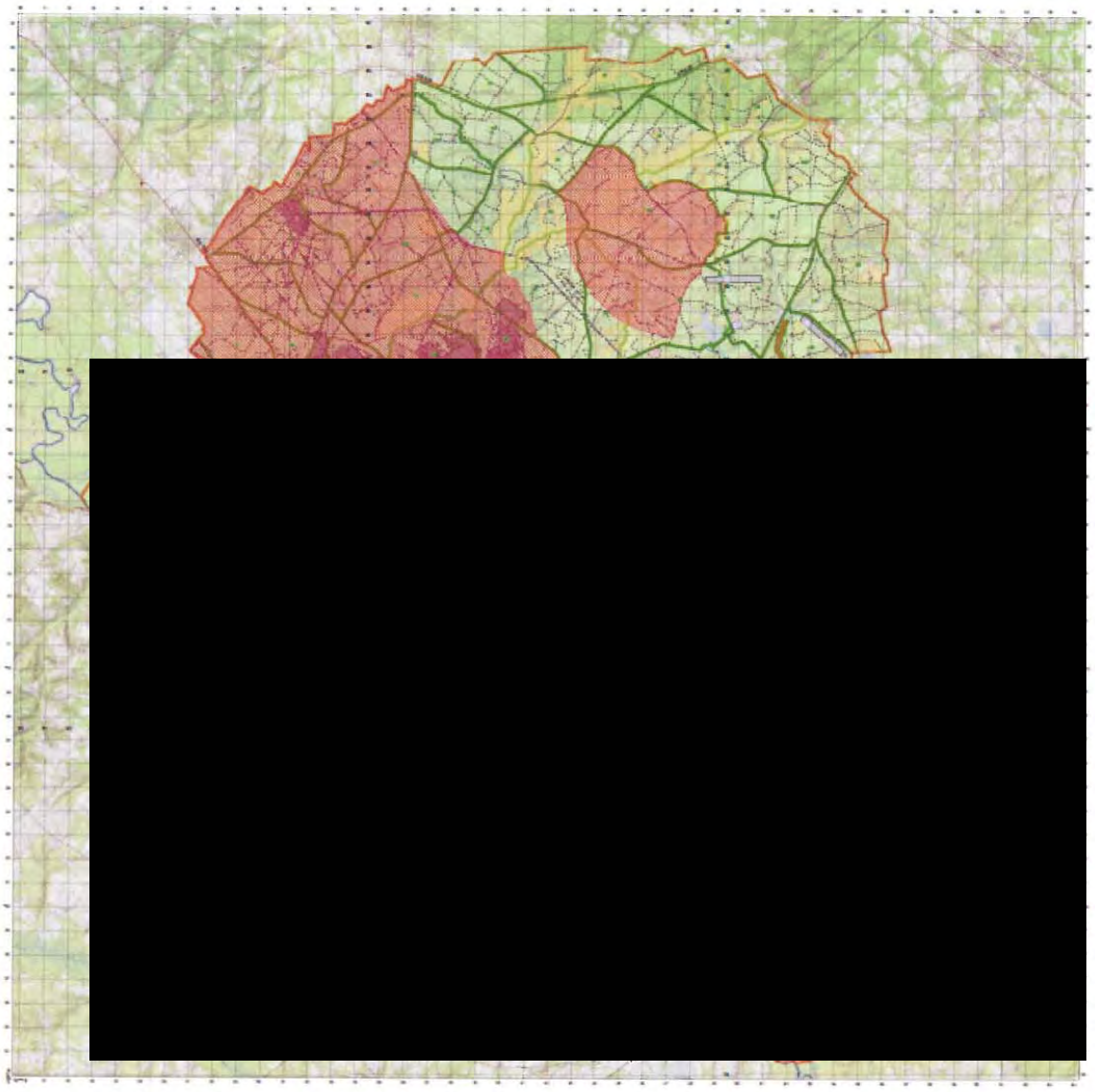
Organization	Name	e-mail
Director FG DPTMS	[redacted]	
Chief, FG, Training Div.		
FG Range Manager		
FGRC TFC		
FG ITAM Coordinator		
FG ITAM ARC GIS		
DOE-OSSES		
DOE-AMCP		
DOE-OSSES		
USFS-SR		
DOE-OSSES Fire Dept.		
DOE-AMCP		
DOE- EQMD		
DOE- EQMD		
DOE-SR		
DOE-OSSES		
DOE-OSSES PF Oversite		
DOE-OSSES Aviation		
DOE-OSSES		
DOE-Forestry		
DOE-AMIP		
DOE-AMIP		
SRNS-NEPA		
DOE-XXX		
DOE-SRNS-RAP		
USFS-SR SS		
USFS-SR WLB SUPE		
USFS-SR FMO		
USFS-SR TMGR		
USFS-SR ARC-GIS		
USFS-SR RC		
USFS-SR Ecologist		
SRNS SI		
SRNS EM Manager		
SRNS SS&ES		
OEA DOE-SR		
SREL		
WSI - SSD		

WSI – PFod Dir's. Office	[redacted]
AMCP	
USFS-SR	
DOE OCC	
DOE-OS&QA	
DOE-OS&QA	
DOE-AMCP	
SRNS	
SRNS	
DOE-OCC	
PLANT VOGTLE	
SCEMD	
GEMA	

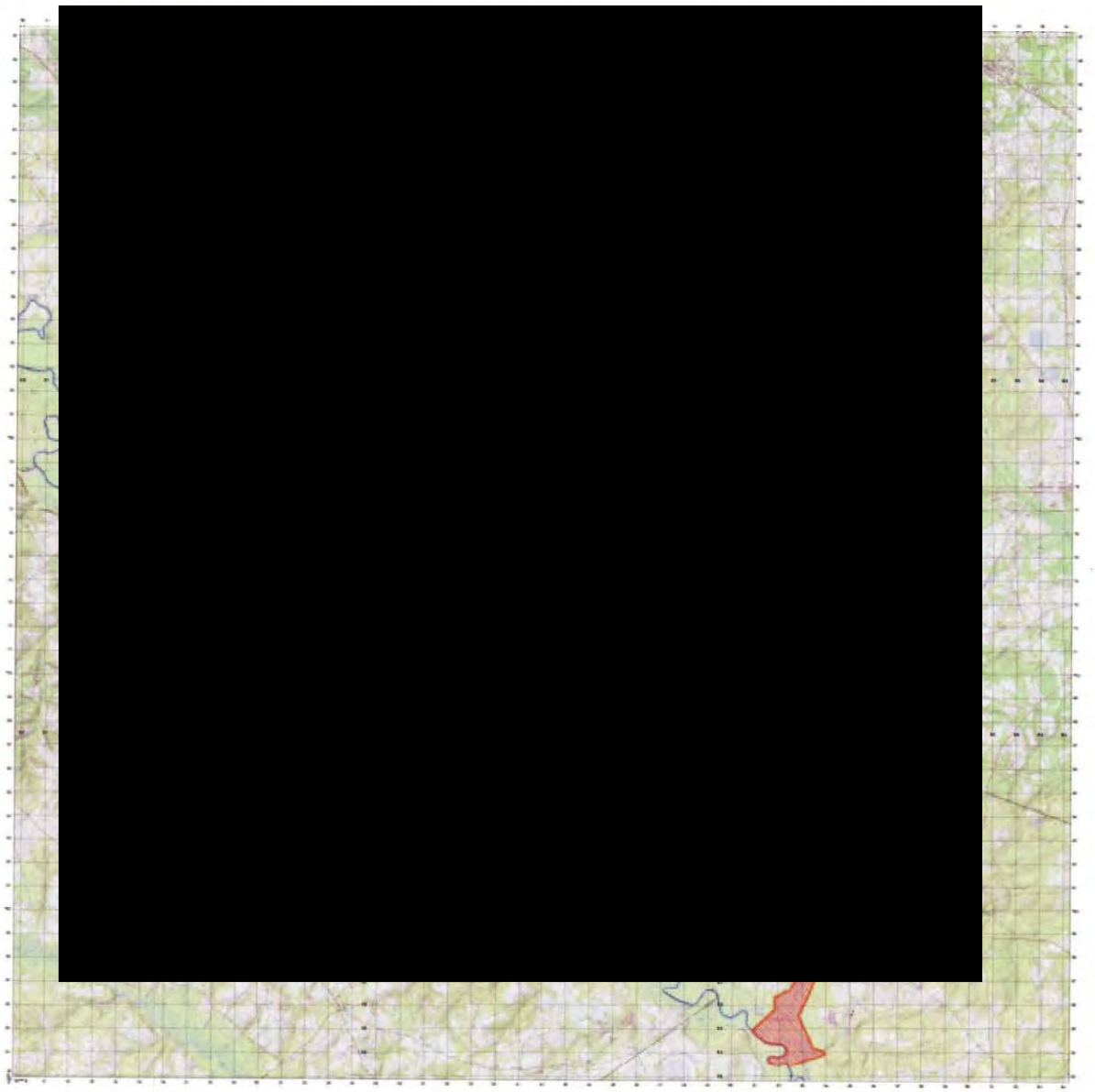
Appendix K
Rotary Wing Aircraft Corridor



Appendix L
Fixed Wing Aircraft Corridor



Appendix M
Domestic Water Flush Hydrant



Yellow circle denotes Hydrant location

Appendix N DA Form 7566-R
Composite Risk Management

COMPOSITE RISK MANAGEMENT WORKSHEET

For use of this form, see FM 5-19; the proponent agency is TRADOC.

1. MSN/TASK	2a. DTG BEGIN	2b. DTG END	3. DATE PREPARED *(YYYYMMDD)*

4. PREPARED BY

a. LAST NAME	b. RANK	c. POSITION

5. SUBTASK	6. HAZARDS	7. INITIAL RISK LEVEL	8. CONTROLS	9. RESIDUAL RISK LEVEL	10. HOW TO IMPLEMENT	11. HOW TO SUPERVISE (WHO)	12. WAS CONTROL EFFECTIVE?

Additional space for entries in Items 5 through 11 is provided on Page 2.

13. OVERALL RISK LEVEL AFTER CONTROLS ARE IMPLEMENTED *(Check one)*

☐ LOW ☐ MODERATE ☐ HIGH ☐ EXTREMELY HIGH

14. RISK DECISION AUTHORITY

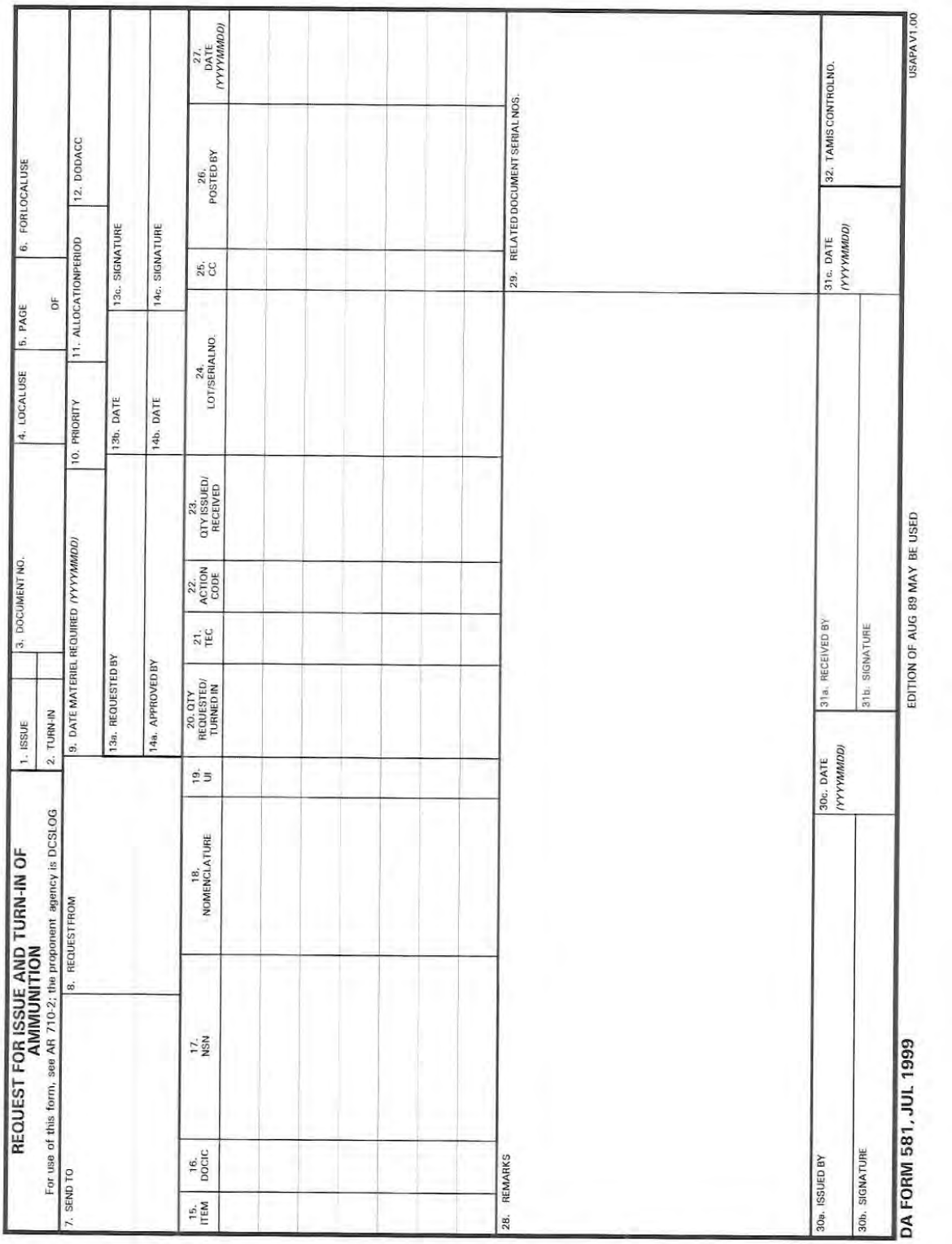
a. LAST NAME	b. RANK	c. DUTY POSITION	d. SIGNATURE

DA FORM 7566, APR 2005

Page 1 of 2

APD V2.00

Appendix O
DA Form 581
Request for Issue and Turn-in of Ammunition



REQUEST FOR ISSUE AND TURN-IN OF AMMUNITION

For use of this form, see AR 710-2; the proponent agency is DCSLOG

1. ISSUE
2. TURN-IN
3. DOCUMENT NO.
4. LOCALUSE
5. PAGE OF
6. FORLOCALUSE

7. SEND TO
8. REQUESTFROM
9. DATE MATERIEL REQUIRED (YYYYMMDD)
10. PRIORITY
11. ALLOCATIONPERIOD
12. DODACC
13a. REQUESTED BY
13b. DATE
13c. SIGNATURE
14a. APPROVED BY
14b. DATE
14c. SIGNATURE

15. ITEM	16. DOCIC	17. NSN	18. NOMENCLATURE	19. UI	20. QTY REQUESTED/ TURNED IN	21. TEC	22. ACTION CODE	23. QTY ISSUED/ RECEIVED	24. LOT/SERIALNO.	25. CC	26. POSTED BY	27. DATE (YYYYMMDD)

28. REMARKS

29. RELATED DOCUMENT SERIAL NOS.

30a. ISSUED BY
30b. SIGNATURE
30c. DATE (YYYYMMDD)
31a. RECEIVED BY
31b. SIGNATURE
31c. DATE (YYYYMMDD)
32. TAMIS CONTROLNO.

DA FORM 581, JUL 1999 EDITION OF AUG 89 MAY BE USED USAPA V1.00

Appendix P
Memorandum of Understanding

MEMORANDUM OF UNDERSTANDING
BETWEEN
THE U.S. DEPARTMENT OF THE ARMY
AND
THE U.S. DEPARTMENT OF ENERGY

CONCERNING

THE USE OF SAVANNAH RIVER SITE LANDS FOR MILITARY TRAINING ACTIVITY

I. PURPOSE AND SCOPE

The Army is engaged in a long-term process of Transformation that involves the restructuring of existing forces, creation of new units, fielding and use of new equipment and weapons systems, and development of new training doctrine. Training scenarios to meet emerging threats will now require the use of large parcels of contiguous land for force-on-force maneuvers. These scenarios will also require training across broad landscapes with units positioned at non-contiguous, non-linear parcels of land with the potential for use of joint forces. As the Army moves forward with Army Transformation, it recognizes that lands within the Army's existing inventory in the Southeastern United States may be insufficient for these scenarios. The Army now has a need to access additional lands suitable for training within proximity to existing Army installations in this region. The Savannah River Site (SRS), owned by the U.S. Department of Energy (DOE), contains large parcels of accessible contiguous land with road networks, terrain features, and vegetative cover suitable for light infantry and other low-intensity training scenarios. The DOE and U.S. Department of the Army agree that Army access to SRS for military training activities, subject to reasonable protocols, is compatible with SRS's ongoing mission requirements and sustainable natural and cultural resource management and stewardship. This MOU establishes the framework for providing Army access to SRS for specified military activities which may include: dismounted infantry operations; aviation operations [i.e., helicopters], including the establishment of Forward Area Rearming and Refueling Points, Landing Zones, and Pickup Zones; logistics functions such as convoy ambush training; and special operations forces. Military training will not involve live-fire or the use of tracked vehicles.

II. AUTHORITY

This MOU will be implemented through an Interagency Agreement (IAG) under the Economy Act, 31 U.S.C § 1535, and other applicable authorities.

Appendix P
Memorandum of Understanding (Cont.)

III. AGENCY RESPONSIBILITIES

A. Department of the Army:

1. Will comply with all DOE Aviation Operations procedures while flying over the SRS and landing on SRS property.

2. Will assume all liability for damages, injury, or fatalities associated with military activities or resulting from the Department of the Army's presence at SRS. The Army will hold DOE harmless for any damage, injury, or fatality associated with military activities at SRS or resulting from the Department of the Army's presence at the site.

3. The Army will be responsible for ensuring that its Soldiers, employees, and contractors comply with applicable safety, security, environmental, and any other applicable Federal and State requirements and policies. The Army will also ensure that it provides necessary personnel, equipment, and other applicable resources for medical and evacuation services to its soldiers, employees and contractors operating at SRS. Neither DOE nor its operating contractors will be responsible for providing medical or evacuation services to military personnel operating in SRS.

4. Will enter into activities only after proper funds have been certified by the appropriate Army official(s) as available to meet its obligations under the IAG.

5. Will involve and support a DOE liaison officer in the planning for use of SRS property for Army purposes. As part of the planning process, the Army will provide a thorough description of the proposed training activities.

6. Will consult with DOE to determine whether military training activities may result in the need to obtain permits or approvals under applicable Federal and State requirements. The Army will not proceed with any proposed training activities until such permits are obtained.

7. Will become familiar with applicable requirements, policies, and documents, including those pertaining to management of natural resources, and undertake agreed upon measures to avoid degradation of cultural and natural resources. If requested by DOE, the Army will provide financial and logistical support for any DOE environmental planning and compliance oversight activities necessitated by the Army's use of SRS, as further set forth in the IAG. If necessary, the Army will provide for mitigation and restoration measures identified in management plans or environmental compliance documents. The Army will indemnify and hold DOE harmless for any damages to natural resources resulting from the Army's presence or activities, including the presence or activities of its contractors.

Appendix P
Memorandum of Understanding (Cont.)

8. Will be responsible for the release of any hazardous substances associated with training activities conducted by the Army and will provide for restoration and remediation in accordance with Comprehensive Environmental Response, Compensation, and Liability Act, the National Contingency Plan and any other applicable requirements. The Army will hold DOE harmless for any environmental cleanup operations that may become necessary as a result of the Army's presence or activities at SRS, including the presence or activities of its contractors.

9. Will identify a representative of the Department of the Army to serve as a liaison to SRS to oversee and implement this MOU and the follow-on IAG, as described below.

10. Is responsible for compliance with all DOE and other applicable Federal and State requirements and policies, including supporting DOE's activities as DOE requests.

B. Department of Energy:

1. Will make SRS lands available for military training activities as specified in the IAG, when such activities are compatible with the ongoing mission activities at SRS as well as with applicable Federal and State requirements and policies. .

2. Will identify a SRS liaison who will assist in the implementation of the IAG. DOE will make all environmental planning, compliance and oversight decisions concerning activities undertaken by the Army under the MOU and the IAG.

3. Will cooperate with the Department of the Army liaison to expedite decisions and resolve issues, concerns, and disputes associated with military activities on SRS.

4. Will oversee the Department of the Army's compliance with all DOE and other applicable Federal and State requirements and policies, as set forth in the IAG between the Army and DOE.

IV. IAG

The IAG implementing this MOU will include, but will not be limited to:

1. Identification of SRS lands required for the military training activities.

2. Specific duties and responsibilities of each agency in the planning process.

3. Procedures for resolving disputes.

Appendix P
Memorandum of Understanding (Cont.)

4. Identification of rights-of-way and other authorizations which may be needed outside the activity areas, including procedures through which Army personnel and equipment can gain entry to SRS through security access points.

5. Army procedures for fire protection and control, worker health and safety, emergency response, and evacuation.

6. Establishment of a plan and procedures for scheduling recurring Army training activities.

7. Responsibilities for site restoration. No activities will be initiated for which site restoration and cleanup funds are not reasonably deemed by DOE to be available.

8. Procedures for emergency cessation of military activities where necessary to protect public health and the environment, meet safety requirements, or satisfy DOE mission and security requirements.

9. Description of the process for reimbursing DOE for the full costs it incurs as a result of the training activities.

10. Procedures for maintaining compliance with all applicable DOE and other Federal and State requirements and policies.

11. A requirement for the Department of the Army to obtain both a site use and a site clearance permit.

V. DELEGATION

Authorized representatives of the Department of the Army and DOE may execute an IAG, and authorized representatives of DOE may issue a site use permit to implement this MOU and the IAG.

VI. MODIFICATION AND TERMINATION

This MOU may be modified or amended upon request of either the Department of the Army or DOE and the concurrence of the other. Either the Department of the Army or DOE may also terminate this MOU with 60 days prior notice. Modification or termination must be executed in writing and signed by an official of each agency, no lower than the level of the original signatures. Termination will not relieve either party from its obligations under this MOU pertaining to site restoration and/or remediation, or other obligations under applicable Federal or State requirements or policies.

Appendix P
Memorandum of Understanding (Cont.)

VII. ADDITIONAL TERMS

1. This MOU in no way restricts either of the parties from participating in any activity with other public or private agencies, organizations or individuals.

2. This MOU is not a funding document. Nothing in this MOU authorizes or is intended to obligate the parties to expend, exchange, or reimburse funds, services, or supplies, or transfer or receive anything of value. The details of any support that might be furnished to one agency by the other with respect to funding will be developed in an IAG, and all subsequent commitments pursuant to the IAG are subject to the availability of appropriated funds.

3. This MOU is strictly for internal management purposes for each of the parties. This MOU shall not be construed to provide a private right or cause of action for or by any person or entity.

VIII. EFFECTIVE DATE OF MOU

This MOU becomes effective when signed by both parties.

[redacted]

for

Appendix Q
Interagency Agreement

DEPARTMENT OF THE ARMY
HEADQUARTERS UNITED STATES ARMY SIGNAL CENTER AND FORT GORDON
506 CHAMBERLAIN AVENUE
FORT GORDON GEORGIA 30905-5715

INTERAGENCY AGREEMENT
between
US DEPARTMENT OF ENERGY, SAVANNAH RIVER SITE
and
US DEPARTMENT OF THE ARMY, FORT GORDON

This Intergency Agreement is hereby entered into by and between the US Department of Energy, Savannah River Site (DOE-SR), hereinafter referred to as DOE-SR, and the US Department of the Army, Fort Gordon, hereinafter referred to as the Army, under the provisions of the Economy Act (31 U.S.C. 1535).

1. PURPOSE. A Memorandum of Understanding (MOU) was signed on 11 June 2007 by the US Department of Energy and the US Department of the Army for the use of Savannah River Site (SRS) lands for military training activity. The purpose of this Interagency Agreement (IAG) is to provide the instrument for implementing the MOU under provisions of the Economy Act (31 U.S.C. 1535) and establish the process for the reimbursement of work done by DOE-SR as well as provide authorization for the development and implementation of specific guidelines, procedures, and processes in matters concerning Army use of SRS.

2. STATEMENT OF MUTUAL INTERESTS AND BENEFITS: Both the Department of Energy and the Department of the Army have an interest in the protection of national security. This agreement will provide the Army with new training lands to help meet the aggressive training requirements of Army Transformation, which involves the restructuring of existing forces, creation of new units, fielding and use of new equipment and weapons systems, and the development of new training doctrine. The Army will also benefit from the unique training capabilities offered by several of the facilities at the SRS. The DOE-SR benefit by providing multiple use management on SRS lands, a prudent use of federal property.

Additional articulation of mutual interest is captured in the MOU between the Department of the Army and the Department of Energy concerning the use of SRS lands for military training activity.

3. DOE-SR SHALL:

a. Provide personnel to assist in matters concerning Army use of SRS.

b. Prepare and provide an annual financial plan for each fiscal year. The financial plan shall include a breakdown and total of all projected costs related to supporting the expected military training load for the upcoming fiscal year based on the estimated annual training load document provided by the Army. This document shall include costs of all full-time and part-time government and/or contractor personnel, vehicles, the cost of office space provided to

Appendix Q
Interagency Agreement (Cont.)

the Army, permit fees and any other expenses associated with military training on the SRS Site.

c. Prepare and process applications and permits required by Federal and State laws, including preparation of environmental documents to ensure compliance required by the National Environmental Policy Act (NEPA).

d. Provide miscellaneous supplies and services, including but not limited, to materials equipment, and vehicle use consumed in conjunction with this agreement.

e. Provide office space for the Military Liaison and other Army employees and/or contractors if space is available. The cost of office space provided to the Army shall be considered in the calculation of the burden rate applied to the agreement.

f. Establish procedures for site use permits and site clearance permits for Army training on Department of Energy lands on the SRS.

g. Perform or assure performance of all site restoration related to Army maneuver damage or any other Army activity on SRS. If requested, DOE-SR may estimate costs for restoration, but the method of execution is up to the Army.

h. While Army activities will generally be governed by Army regulations and procedure, DOE-SR will specify any additional DOE-SR requirements applicable to Army training on SRS.

4. ARMY SHALL:

a. Prepare and provide an estimate of the expected military training load for the upcoming fiscal year each year. Estimate shall include expected number of flight hours, types of aircraft, types and number of vehicles, expected number of personnel, and approximate duration of training events. This document shall be prepared by Fort Gordon Training Division staff and signed by the Director, Fort Gordon DPTMS, each year.

b. Designate a Military Liaison Officer to deal with issues regarding military training on SRS.

c. Review all applications and permits developed by DOE-SR as required by Federal and state laws, including environmental documents, to ensure compliance required by the NEPA.

d. Develop a range orientation brief that will be mandatory for the Officer in Charge and Range Safety Officer of each military unit prior to training on SRS. The course shall include Sustainable Awareness environmental training specific to the SRS.

e. Be responsible for all site restoration related to maneuver damage or any other Army activity on SRS. No Army activities will be initiated for which site restoration and cleanup funds are not reasonably deemed by DOE-SR to be available.

Appendix Q
Interagency Agreement (Cont.)

f. Comply with all applicable DOE and other Federal and State requirements and policies. The Army Standard Operating Procedure (SOP), or as otherwise added by addendum to this agreement, will contain the applicable DOE and other Federal or State requirements.

g. Assume full responsibility for all Army activities. Other than as specified in Items 3h and 4f, the Army will be governed by Army regulations and procedures.

5. IT IS MUTUALLY AGREED AND UNDERSTOOD BY ALL PARTIES THAT:

a. A Standard Operating Procedure (SOP) will be developed jointly by both parties. The SOP will, at a minimum, implement all commitments made by both parties in the MOU and be the primary controlling document for all Army training activities on the SRS. The SOP is hereby incorporated by reference and made a part of this IAG in its entirety.

b. Identification of SRS lands required for military training activities will be specifically designated in NEPA documentation to be prepared under the authority of this IAG.

c. The resolution of issues, misunderstandings or disputes shall be resolved at the lowest level possible beginning with the Liaison Officers with DOE-SR and the Army. The next level of authority shall be the Assistant Manager for Integration and Planning and Garrison Commander, with the DOE-SR Manager and IMCOM-SE director having the final responsibility.

d. Procedures through which Army personnel and equipment can gain entry to SRS will be established in the Standard Operating Procedure developed and approved by both parties under the authority of this IAG.

e. The Army will report any fires to DOE-SR and will provide first response according to the SOP. The Army will respond to instructions from the DOE-SR fire personnel once on the scene.

f. In the case of a medical emergency, the Army will have the first response. The Army will immediately contact DOE-SR and provide pertinent information such as the severity of the injury, status of vital signs if known, and current location. If DOE-SR response is required, the Army will be responsible for transporting injured individual to pre-positioned rally points.

g. In the case of a SRS emergency, DOE-SR will immediately contact the Army with detailed instructions. It is the Army's responsibility to account for every individual involved in a training event once instructions have been given. The Army will notify DOE-SR as soon as all instructions have been carried out and the Army will await further guidance from DOE-SR before taking any further action.

6. MODIFICATION: Modifications within the scope of the instrument shall be made by mutual consent of the parties, by the issuance of a written modification, signed and dated by all parties, prior to any changes being performed.

Appendix Q
Interagency Agreement (Cont.)

7. TERMINATION: Either party may terminate this IAG with 60 days prior notice. Termination must be executed in writing and signed by an official of each agency, no lower than the level of the original signatories. Termination will not relieve either party from their obligations under the MOU pertaining to site restoration and/or remediation, or other obligations under applicable Federal or State requirements or policies.

8. PRINCIPAL CONTACTS: The principal contacts for this instrument are:

9. BILLING.

a. Transfer of funds to DOE-SR will be through the Intra-Governmental Payments and Collections (IPAC) System.

b. The Fort Gordon Garrison Resource Management Office POC will prepare and submit to DOE-SR a DD Form 448, Military Interdepartmental Purchase Request (MIPR), which shall include but will not be limited to: the complete Army accounting classification, agency location code, detailed description of order and/or services, authorized funding, points of contact and billing information. Once DOE-SR receives the MIPR, they shall prepare and submit to Fort Gordon GRMO a DD Form 448-2, Acceptance of MIPR.

c. DOE-SR shall provide a complete line of accounting and Agency Location Code

Appendix Q
Interagency Agreement (Cont.)

to the GRMO POC.

d. DOE-SR shall not bill the Army in excess of the MIPR amount. If additional funds are required, DOE-SR shall request the Army for an amendment to the MIPR to increase the funding amount.

e. DOE-SR shall not bill the Army prior to the delivery of goods or performance of services.

f. Billings covering reimbursements shall identify costs by each item listed in the MIPR.

g. This IAG may cover multiple MIPRs given a valid scope of work related to the use of Savannah River Site lands for military training.

h. Billings shall be submitted by DOE-SR on a monthly basis unless otherwise stated in the MIPR.

i. Funds not actually obligated by the expiration date of the period of performance shall be returned to the Army.

Appendix Q
Interagency Agreement (Cont.)

III. COMMENCEMENT DATE: This instrument is executed once signed by both parties

THE PARTIES HERETO have executed this instrument.

Appendix R
DA Form 1594 Staff Journal

DAILY STAFF JOURNAL OR DUTY OFFICER'S LOG

For use of this form, see AR 220-15; the proponent agency is Office of The Deputy Chief of Staff for Operations & Plans

PAGE NO.	NO. OF PAGES

ORGANIZATION OR INSTALLATION	LOCATION	PERIOD COVERED			
		FROM		TO	
		HOUR	DATE	HOUR	DATE

ITEM NO.	TIME IN	TIME OUT	INCIDENTS, MESSAGES, ORDERS, ETC.	ACTION TAKEN	INL

TYPED NAME AND GRADE OF OFFICER OR OFFICIAL ON DUTY	SIGNATURE

DA FORM 1594, NOV 62 PREVIOUS EDITION OF THIS FORM IS OBSOLETE. USAPPC V3.00

Appendix – S
Communications Plan

Communications Plan
Military Training Activities at Savannah River Site

The 90, 60 30 day coordination and approval process as stipulated in Chapter 3, is the basis for the communication plan.

90 Day Notification At least 90 days before a potential training activity, an information packet is submitted to SRS with a general description of a proposed training activity and requesting use of the Site	The information package will be distributed as provided in Appendix J. At any time during the 90-60-30 day notification and approval process the DOE-SR OEA may advise the Fort Gordon Training Facility Coordinator (FGTFC) if the activity is deemed to be of significance such that it should be provided for public notification.
	For activities that have been deemed to be of significance such that it should be provided for public notification beyond the list in appendix J, the FGTFC will work with the Fort Gordon Public Affairs Office to develop the proposed text, distribution list, and timing for notification. The proposed notification package will be provided to the DOE OEA for concurrence.
60 Day Notification At least 60 days before a potential training activity, an information packet is submitted to SRS with a detailed description of the planned training activity. In conjunction, a meeting will be scheduled to discuss and coordinate the activity.	The information package will be distributed as provided in Appendix J.
30 Day Notification At least 30 days before a potential training activity, an information packet is submitted to SRS with a finalized description of the planned training activity. In conjunction, a meeting will be scheduled to discuss and approve the activity.	The information package will be distributed as provided in Appendix J. For activities deemed to be of significance for public notification, the release will be implemented according to the approved content and schedule.
Notification and Announcements	The day prior to a training activity, final notification of the exercise will be provided to the DOE-EM OEA of the information to be provided to the SRS EOC with wording for announcements on the Site's public address system.
Army POC	At any stage of the process, the DOE-SR OEA may contact the Fort Gordon Training Facility Coordinator [redacted]

Appendix – S
Communications Plan (Cont.)

Emergency Notifications for DOE-SR Office of External Affairs (DOE-SR OEA)
In the event there is an emergency that results from Army training activities on SRS, the TFC will contact the DOE-POC at the first available moment. The DOE-POC will contact OEA to determine if the emergency warrants media notification. If so, OEA, the DOE-POC, and the TFC will develop the best course of action and message to provide to the media. If required, the Army will provide public affairs officers at the SRS Joint Information Center and SRS Command Room to coordinate

GLOSSARY

Explanation of Abbreviations and Terms.

The following are brief explanations of abbreviations, names, and special terms used in this JSOP.

a. Ammunition Holding Area (AHA) – Location established by a unit to control and secure training ammunition. Chapter 9 of this SOP covers procedures for establishing an AHA.

b. Combat Life Savers (CLS) –Soldiers, other than those medically certified, trained to perform advanced medical services to soldiers on the battlefield or training exercise. Most soldiers are trained CLS.

c. Department of the Army Civilians (DAC) – Civilians, normally federally employed by the Army to perform services to assist Army units. This may include contractors not directly employed by the federal government.

d. Department of Defense (DOD) – Covers Army, Navy, Marine Corps, Coast Guard active duty servicemen and women and DACs.

e. Department of Defense Information Code (DODIC) – Code furnished to each piece of ammunition or pyrotechnic in the Army inventory that describes its use and hazards.

f. Department of Energy - Office of Safeguards and Security and Emergency Services – Savannah River Site (DOE-OSSES- SRS): DOE Organization responsible for oversight of the Site's physical security.

g. Department of Energy Savannah River Operations Office (DOE-SR): Responsible for the DOE-Environmental Management Program at SRS and serve as Site landlord with responsibility to coordinate and provide facility and infrastructure support to other Site tenants.

h. Forward Arming and Refuel Point (FARP) – Used to refuel aircraft and ground support vehicles and equipment during combat and field training exercises. A FARP may be permanently fixed or mobile.

i. Forward Operating Base (FOB) – FOBs are established, fortified locations usually near the forward line of combat operations. They are used to reduce the distance required to regain contact with enemy forces. FOBs provide relatively safe locations for units to conduct maintenance to vehicles, aircraft, and equipment. The FOB size, dimension, capabilities, and location are dependent on the unit mission and enemy capabilities in the immediate area.

j. Fort Gordon Directorate of Plans Training Mobility and Security (DPTMS) – Coordinates all Fort Gordon infrastructure, training, and security requirements.

k. Fort Gordon Range Control (FGRC) – Fort Gordon organization responsible for all Fort Gordon Ranges and Training Areas used by active duty, National Guard, and Reserve components of the Department of Defense.

l. Fort Gordon Range Control – Savannah River Site (FGRC-SRS) - FGRC representative responsible for all Fort Gordon Ranges and Training Areas used by active duty, National Guard, and Army Reserve components and their Joint support elements while training at SRS.

m. Fort Gordon Range Control – Training Facility Coordinator (TFC) - The Fort Gordon Range Control - TFC has overall responsibility for coordinating Army training mission on SRS. The TFC will ensure compliance of all DOE and DOD Orders, Regulations, and Manuals. The TFC will develop necessary requirements and logistical support structures for units to occupy and train

safely on SRS. The TFC is the primary liaison for SRS tenants, FGRC, and all training units. The FGRC-TFC ensures compliance with Environmental and Natural Resources requirements at the Federal, State, and local level with regards to facility and training area management on SRS.

n. Georgia Department of Natural Resources (GA-DNR) – Controls Game and Wildlife Management for the state of Georgia from the Savannah River which borders the Savannah River eastward.

o. Government Owned Vehicle (GOV) – Non-tactical commercial type vehicles driver by government employees.

p. Government Transportation Motor Pool (TMP) – Location where GOVs are issued and dispatched.

q. Improvised Explosive Device (IED) – Lethal weapon (explosive device) which can be made from captured ammunition or material commercially found on the open market. IEDs have resulted in the majority of deaths to U.S. Servicemen on the battlefield in Iraq and Afghanistan. IEDs are employed by terrorists and insurgent organization throughout the Middle East.

r. Interagency Agreement (IAG) - The purpose of this Interagency Agreement (IAG) is to provide the instrument for implementing the MOU under provisions of the Economy Act (31 U.S.C. 1535) and establish the process for the reimbursement of work done by DOE-SR as well as provide authorization for the development and implementation of specific guidelines, procedures, and processes in matters concerning the Army's use of Savannah River Site.

s. Logistics Collection Points (LCPs) – Location established by large Army units for the purpose of securing, controlling, and dispensing fuels, petroleum products, supplies, and equipment.

t. Landing Zones (LZs), Drop Zones (DZs), Pickup Zones (PZs) – Locations established for the purpose of landing fixed and or rotary winged aircraft, parachute deployment, troop pickup, or delivery of cargo systems,

u. Major Commands (MACOMs) – Installation such as Ft. Gordon, Ft. Benning, Ft. Stewart, and Ft. Bragg that are located on the east coast of the United States and surround SRS.

v. Medical Evacuation (MEDEVAC) – Transporting a patient from the battlefield or training location for the purpose of medical treatment. Usually transported by ground and or air assets to a treatment facility.

w. Memorandum of Understanding (MOU) - A Memorandum of Understanding (MOU) was signed on 11 June 2007 by the US Department of Energy and the US Department of the Army for the use of Savannah River Site (SRS) lands for military training activity.

x. Mission Essential Tasks (METL) – Those tasks that must be trained by the unit in order to meet mission requirements. Examples, convoy operations, IED training, etc.

y. Multiple Integrated Laser Engagements Systems (MILES) – System used by the Army to train units during force-on-force exercises. MILES devices allow soldiers to use real weapon to engage training adversaries. When the weapon is fired, transmitters emit a laser light which hits a receiver unit registering a hit.

z. Night Vision Goggles (NVGs) – Worn by operator of vehicles, aircraft, and dismounted infantry at night. NVGs collect and amplify ambient light allowing the operator to maneuver at night or low light conditions.

aa. Plant Vogtle Nuclear Power and Generating Plant – Located on the Savannah River directly across from the Savannah River Site. Plant Vogtle generates and provides electrical power to local communities in the surrounding area.

bb. Officers in Charge (OICs) – Overall responsible for the safe conduct of training on SRS. The OIC cannot participate in training when assigned duties as OIC.

cc. Range Safety Officers (RSOs) – Answers directly to the OIC. The RSO cannot participate in training when assigned duties as OIC. Provides the safety briefing to soldiers before the commencement of training.

dd. Refuel on the Move (ROM) – Vehicle use ROM locations to quickly refuel multiple vehicles during short halts during long distance convoy operations.

ee. Savannah River Ecology Lab (SREL) – Monitors and studies ecologically sensitive vegetation and wildlife on SRS.

ff. Savannah River Nuclear Solutions LLC (SRNS) – Contractor responsible for providing infrastructure support to all SRS tenant organizations.

gg. Savannah River Site Fire Department (SRSFD) – Provides fire, medical, ambulatory, and other emergency support to SRS.

hh. Savannah River Site Operations Center (SRSOC) – Location where radio communications are controlled for the entire site. Location where direction and emergency support and recovery is directed for Site Emergencies.

ii. Site Emergencies – Cover manmade, natural disasters, and security events which may occur at SRS.

jj. South Carolina Department of Natural Resources (SC-DNR) - Controls Game and Wildlife Management for the state of South Carolina on the Savannah River Site and surrounding areas.

kk. Tactical Operations Center (TOC) – The location of Army command elements that are used to control combat operations in a tactical and tactical training environment.

ll. Unit Maintenance Collection Points (UMCPs) – Locations where Army equipment can be repaired. Usually located in secure areas away from combat operations.

mm. United States Forest Service – Savannah River (USFS-SR). Manages forest and timber related issues on SRS. Oversees wildlife management and studies for all protected and endangered species on SRS.

Biological Evaluation

for the

Proposed United States Army Military Training Activities on the Savannah River Site

Department of the Army – Fort Gordon Range Control – Directorate of Plans, Training, Mobilization, and Security

Location:

Aiken, Allendale, and Barnwell Counties, SC., Savannah River Site

Contact Person: Donald S. McLean, 706-840-5522 / 706-791-2422

Submitted by Fort Gordon Range Control Training Facility Coordinator (DPTMS)

Prepared By: _____
Donald S. McLean, Training Facility Coordinator Fort Gordon Georgia **Date:**

Table of Contents

Attachments

- US Army Corps of Engineers Final Report Assessment of Training Noise Impacts on the Red-cockaded Woodpecker
- US Army Corps of Engineers Assessment of Effects of Maneuver Training Activities on Red-cockaded Woodpecker Populations on Fort Stewart, Ga.
- Aerial Photo of Fort Stewart TES Locations
- 2007 Army RCW Management Plan
- Short nosed sturgeon Bathymetry

SUMMARY

In accordance with the Memorandum of Understanding (MOU) September, 2007 and the Interagency Agreement (IAG), 2009, between the U.S. Department of the Army Fort Gordon and U.S. Department of Energy-Savannah River (DOE-SR); the Army proposes to use DOE-SR managed land for non-live fire training activities to supplement Army wide shortages of available training lands. The Savannah River Site (SRS) covers 198,000 square acres; of which only select locations of roughly 120,000 square acres could be used for military training. Within these 120,000 acres, various locations will be restricted to military training activities because of environmentally protected areas, concern to federally protected species and their habitat, and other restrictions imposed on the Army by DOE-SR and agreed to by Fort Gordon Range Control (FGRC). The scope of the training activity will dictate which portions of the 120,000 acres of available land will only be used.

In accordance with the National Environmental Policy Act (NEPA) Analysis Guidance Manual 2007, the action agency is not required to prepare a biological assessment for actions that are not major activities, but if a listed species or critical habitat is likely to be affected, the agency must provide an evaluation of likely effects of the action. Section 7(a)(2) of the Endangered Species Act (ESA) requires federal agencies to consult with the appropriate regulator; U.S. Fish and Wildlife Service (USFWS) or the National Oceanic Atmospheric Agency – Fisheries [NOAA Fisheries]) if a proposed action authorized, funded, or carried out by them may affect a listed species or critical habitat. This Biological Evaluation (BE) is required because of the five species of federally listed endangered species:

- Smooth purple coneflower (*Echinacea laevigata*) - endangered
- Pondberry (*Lindera melissifolia*) - endangered
- Shortnosed sturgeon (*Acipenser brevirostrum*) - endangered
- Wood stork (*Mycteria Americana*) - endangered
- Red-cockaded woodpecker (RCW) (*Picoides borealis*) – endangered

This Biological Evaluation will also address the following species:

- American Alligator (*Alligator mississippiensis*) - threatened by Similarity of Appearance
- Bald Eagle (*Haliaeetus leucocephalus*) Bald and Golden Eagle Protection Act; Migratory Bird Treaty; Sensitive Species

This proposed activity does not recommend any actions that would qualify for the re-initiation of a formal consultation for any of the aforementioned federally protected species. In addition, this biological evaluation concludes that the proposed training activities by the Army or other military units in general, ***may affect, but not likely adversely affect, individual species***.

This Biological Evaluation, in accordance with the Joint Standard Operating Procedure (JSOP), SRS Land and Facilities, applies to all Army units, the Army Reserve, the Army National Guard, FGRC, Department of the Army Civilians (DACs), sponsors and contractors associated with and or attached to the Army for the purpose of training on DOE-SR. Other military organizations include the Navy, Air Force, Marine Corps, and U.S. Armed Forces jointing operating on DOE-SR for the purpose of military training.

The term Army will be used throughout this BE applies to all aforementioned Armed Services.

Introduction

This BE shall evaluate the potential effects of the proposed action on listed and proposed species and designated and proposed critical habitat and determine whether any such species or habitat are likely to be adversely affected by the action and is used in determining whether formal consultation or a conference is necessary.

In accordance with the Army Environmental Command, Final NEPA Analysis Guidance Manual, Section 7(a)(2) of the ESA 1973 requires federal agencies to consult with the appropriate regulator (USFWS or NOAA Fisheries) if a proposed action authorized, funded, or carried out by them may affect a listed species or critical habitat.

Pursuant to Section 7(a) (4) of the ESA, Federal agencies must consult with USFWS or NOAA-Fisheries on proposed actions that are likely to jeopardize the continued existence proposed species or result in the destruction or adverse modification of proposed critical habitat.

During consultation, a biological assessment or other evaluation document must be developed that assesses the proposed action's effects on listed species. If the action agency determines that the proposed action will not likely adversely affect the listed species or critical habitat and USFWS or NOAA-Fisheries concurs, then consultation concludes and no formal consultation is required.

If the action agency determines that a proposed action will likely adversely affect a listed species or critical habitat, then formal consultation is initiated. Formal consultation results in a Biological Opinion by USFWS or NOAA-Fisheries that concludes whether the proposed action is likely to jeopardize the continued existence of the species and/or will result in destruction or adverse modification of critical habitat. For "non-jeopardy" opinions, an incidental take statement (if applicable) will be issued if take is anticipated. The incidental take statement will include the number of authorized take and non-discretionary reasonable and prudent measures that the installation must undertake to minimize the incidental take.

If a "jeopardy" opinion is issued, potential impacts are indicated, reasonable and prudent alternatives are recommended that would avoid the likelihood of jeopardizing the listed species or the destruction or adverse modification of designated critical habitat, and measures to minimize the effect are listed.

If "jeopardy" or "adverse modification" cannot be avoided, an exemption from the ESA may be requested by the action agency, though no federal agency has ever requested an exemption from the ESA.

Project Description

The U.S. Department of the Army Fort Gordon and DOE-SR propose to use DOE-SR land for non-live fire training activities. This proposed action would entail low impact training events that may affect, but are not likely to affect, listed species. Training activities could include the following:

- Army Aviation (Fixed and Rotary Wing)
- Light Maneuver Forces (Rubber boat water craft, wheeled vehicles, and foot traffic)
- Service Support Units (Supply, Maintenance, Transportation, Health services, Light Engineers, Military Intelligence, Chemical, and Signal)

Purpose and Need for Proposed Action

It must be made clear that as part of the proposed action, DOE-SR would not have to adjust land use management to support the proposed Army training activities. For the most part, Army activities are secondary and will not interfere with DOE-SR missions, operations, and activities at SRS. This specifically refers to U.S. Department of Agriculture (USDA)-SR activities. Army training events will be coordinated and approved by DOE-SR. The Army has a record of being stewards in environmental protection.

Army training scenarios to meet emerging threats require the use of parcels of contiguous and noncontiguous land for maneuver training. These scenarios will require training across broad landscapes with units positioned at noncontiguous, non-linear parcels of land.

Land resources currently available to the Army in the southeastern United States are not capable of supporting these non-contiguous training scenarios. The Army has a need to access additional lands suitable for training within proximity to existing Army installations in the southeastern United States.

In 2006, the Army was short approximately 2 million acres of maneuver training land to meet the training requirements for the units stationed in the Continental United States (CONUS). This overall land shortfall has been exacerbated by:

- Army Transformation
- The 2005 Base Realignment and Closure (BRAC)
- The Army's Global Defense Posture Realignment (GDPR)
- The Contemporary Operating Environment (COE)
- The Department of the Army Grow the Army initiative.

Consequently, by 2011 the Army will have a shortfall of approximately 5 million acres of maneuver training land in the CONUS needed to train Army forces (reference). Based on this, the Army has developed a strategy to help overcome this maneuver training land shortfall, which includes: focused management of existing lands to maximize the use of all maneuver training lands; buffering through partnerships to establish Army Compatible User Buffers around Army installations to protect the current installation training capabilities from urban encroachment; and use of other federal lands for training Army forces. It is not reasonable for the Army to expect to be able to purchase sufficient acreage to make up for this training land shortfall.

Within the southeastern United States, the Army has 3 major installations where Army tactical units are stationed and train. These are Fort Bragg, North Carolina and Forts Benning and Stewart in Georgia. In addition, Fort Rucker, Alabama hosts the basic aviation training for all Army aviators. Combined, these 4 installations are short 955,912 acres of land to support current training requirements. Individually, the installations are short the following number of aces:

- Fort Bragg, North Carolina - 479,182 acres
- Fort Stewart, Georgia - 274,525 acres
- Fort Benning, Georgia – 186,693 acres
- Fort Rucker, Alabama - 15,512 acres

Enhanced Army National Guard and Reserve requirements demand additional training land to support Homeland Security missions, such as, National Guard and Reserve Civil Support Teams, Home Land Response Force, Chemical Biological Radiological (CBR) Response Force Package (RFP).

The proposed action would support the Army plans and initiatives, defense and national security requirements, and Army force modernization initiatives. The proposed action would sustain Army and DOD mission requirements, potential future missions, while recognizing Army stewardship responsibilities within the southeastern United States.

The proposed action would provide the Army with greater flexibility in developing training missions and strategies in response to rapidly changing world conditions. It would allow the Army to provide a training environment that is better suited for current military needs.

This BE concludes that the proposed action ***may affect, but not likely adversely affect.***

- Smooth purple coneflower (*Echinacea laevigata*) - endangered
- Pondberry (*Lindera melissifolia*) - endangered
- Short-nosed sturgeon (*Acipenser brevirostrum*) - endangered
- Wood stork (*Mycteria Americana*) - endangered
- Red-cockaded woodpecker (RCW) (*Picoides borealis*) – endangered

This BE will also address the following species:

- American Alligator (*Alligator mississippiensis*) - threatened by Similarity of Appearance.
- Bald Eagle (*Haliaeetus leucocephalus*) Bald and Golden Eagle Protection Act; Migratory Bird Treaty; Sensitive Species

Construction of Airborne Drop Zones and Forward Operating Bases (FOBs)

Currently, the Army proposes to develop 1 FOBs, and a Drop Zone (DZ).

Forward Operating Base (FOB)

In a tactical setting, FOBs are used by the Army as secure and safe locations for soldiers to sleep, eat, and maintain equipment. FOBs are located close to the enemy allowing soldiers rapid response to threat scenarios. FOBs are relatively easy to construct. During initial phases of FOB development, a FOB on SRS would have minimal life support systems (such as fixed kitchens, fuel points, and living quarters) in place for training units to support their training event. These support platforms would be brought with Army units for the duration of the training event. Training units will deploy to SRS as if they were deploying to a foreign nation. This trains units to be self sufficient during overseas deployments.

One of the FOBs, located on Gun Site 51, is located in the Supplemental RCW Management Area. This FOB would be situated on the remnants of old concrete building foundations of Gun Site 51. Gun site 51 is not actually a gun site, simply the name of what once was the site of an anti-aircraft facility used to protect the facility during many years ago. All that exists at Gun Site 51 are concrete building foundations. Gun Site 51 is relatively clear of trees and would not require clearance of large pines that might be suitable as RCW habitat. Small, hardwoods may have to be removed from around the old foundations for placement of FOB perimeter barriers; i.e., HESCO barriers. HESCO barriers are prefabricated, metal-mesh screen and fabric boxes. They are unfolded and filled with soil, which then allows the boxes to maintain their shape. The HESCO barriers are placed side by side to form a thick wall that is virtually impenetrable to large caliber bullets and anti-tank rockets. These barriers are easily emplaced or moved without much excavation of earth. The existing concrete foundations also provide a location where a FOB could be built without removal of RCW habitat. Gun Site 51 is the best location on SRS to build a FOB because it is free of contamination previously identified at other Gun Site locations on SRS and provides a “ready-made” base for tents, HESCO barriers, and various pieces of mobile Army equipment. Gun site 51, is located between Highway 125 (HWY 125) and roughly 0.5 miles west of L-Lake. A second FOB of similar design would be located in the vicinity of the industrial footprint of 484 D Power House. Construction on the D-Area FOB would not begin until after decommissioning efforts (of the power house?) have ended, on or about FY 2016.

Aircraft Drop Zones (DZs)

DZs are used by the Army to insert airborne forces by parachute from fixed and rotary wing aircraft. A DZ could also be used to exercise various cargo delivery systems, and as a Helicopter Landing Zone (HLZ). Minimum altitude for cargo and airborne operations is 1500 feet Above Ground Level (AGL). For DZ

construction, the Army initially proposed 6 locations for DZ construction. Construction would involve timber harvest, leveling of soil, and planting of grass to construct a DZ to standard. The USFWS has stated through USDA-SR that any DZ development on SRS should be discouraged because each DZ foot print was situated in RCW management and supplemental locations.

The USFS-SR provided an alternate location outside of the RCW management and supplemental locations for proposed DZ use. This DZ is situated near Water Gap Road, in Timber Compartment 44 of the Industrial Core Management Area. The proposed Water Gap road DZ location is acceptable to the Army as the location for a DZ. See page 15.

General

Army Environmental Protection and Responsibilities for Training on SRS

The U.S. Army Fort Gordon, which will oversee management of all Army training activities on SRS, is fully committed to protect Savannah River Site natural habitats, wetlands, and federally protected species of animals and fauna.

FGRC-SRS and the Army unit training on SRS is ultimately responsible for ensuring all tactical training is conducted so as not to destroy, pollute, or contaminate DOE-SR natural habitats and environments. FGRC-SRS will provide Range and Training Land Assessment (RTLA) through Integrated Training Area Management (ITAM) during all phases of the training activities. The driving documents for the protection of SRS environments are the JSOP, the Environmental Assessment (EA), and this BE.

Historical Data, Studies, Agreements, and Initiatives

Specific agreements between the DOE, DOE-SR, and Department of the Army, Fort Gordon were developed to ensure environmental compliance of federal, state, and local laws in protecting the environment.

In September of 2007, a MOU between the U.S. Department of the Army and DOE was signed for the use of SRS lands for military training activities.

In September of 2009, an IAG was signed between DOE-SR and Fort Gordon which established specific guidelines through the NEPA process in development of an EA of SRS lands for military training.

In October of 2009, in accordance with the IAG, funds were provided to SRS by ITAM Fort Gordon, for the development of an Environmental Assessment (EA) for specific Army training activities on SRS. Currently, the FGRC- Training Facility Coordinator (TFC) has been working closely with the SRS NEPA Coordinator in the development of the EA. By having the SRS NEPA coordinator develop the EA, an unbiased opinion of proposed training activities was developed.

The FGRC-TFC has provided SRS NEAP coordinator a list of proposed Army training activities. These activities will have certain restrictions. One of the key elements of the EA states that no tracked Army vehicles (tanks) or lethal ammunitions (fragmenting, projectiles, high explosive, etc.) will be allowed on SRS for Army training activities.

The FGRC-TFC has been working closely with the USFS-SR Wildlife Biology Supervisor, to develop procedures that restrict certain military activities from DOE-SR federally protected specie locations and USFS-SR activities. These procedures can be found in the draft copy of the JSOP and EA. The documents are available up request.

In August of 2010, the URS Corporation conducted a photo monitoring evaluation of SRS. URS photographed select locations of SRS to establish a baseline of the current condition of proposed SRS training locations. The evaluation considered vegetation, terrain, foot trafficability, line of site (distance),

and accessibility. After SRS has been substantially used by the Army, URS will reevaluate SRS to determine what types of maneuver damage has occurred, if any. URS can then advise ITAM resources on best management practices (BMPs) to protect the environment.

Community Outreach

As part of the Army's commitment to preserving the natural environment of SRS, the Army has presented its proposed training activity to the public, local industries, municipalities, and economic groups. The EA will be submitted for public review and comment.

Savannah River Citizens Advisory Board
Barnwell County Administrators
Barnwell County Regional Airport
Savannah River Community Reuse Organization
South Carolina DNR
Nuclear Solutions (Barnwell)
Southeast Management Association
Plant Vogtle
Barnwell County
Savannah River Emergency Services
Government Training Institute, Barnwell
Georgia DNR

Savannah River Nuclear Solutions (SRNS) Interface Management Team (IMT) Meeting

SRNS chairs a monthly meeting, which all site tenant organizations attend to discuss ongoing projects, safety, and events. This venue has been used to discuss proposed Army training activities and concerns presented by the IMT to the Army representative.

Annual Training Plan

The FGRC-TFC will provide an annual training plan that outlines all training events for that fiscal year. The annual plan will allow advance planning and coordination between the Army, USFS-SR, and SRNS to prevent and reduce interference with ongoing USDA and USFS activities.

90 Day Notifications

In most cases, the FGRC-TFC, will notify the USFS-SR at least 90 days in advance of a proposed training event. This will allow the USFS-SR sufficient time to address concerns in proposed training lands on SRS.

60 Day Scheduling and Training Coordination Meeting

The 60 day scheduling and training coordination meeting is designed to facilitate and outline the training requirements for the Army. DOE-SR organizations, in particular, the USDA-USFS-SR will be invited to each 60 day meeting. The FGRC-TFC will provide a draft of the proposed training exercise(s) to all tenant organizations in attendance. This will allow tenant organizations to address concerns and at the same time better define Army training locations.

30 Day Unit Coordination Packet Submission to DOE-SR and the FGRC - TFC

A unit coordination packet of the proposed training event will be completed by the Army Unit and returned to the TFC such that the TFC may provide a finalized "Roll Up" of the proposed training exercise to the DOE-SR no later than 30 working days prior to the first day of training. The proposal should not be substantially changed from the 60 day proposal and will reflect any adjustments made after the final resolution of the 60 day review comments.

Specific data which may be of interest to the USFS-SR is:

- Equipment List.
- Training Ammunition List.
- Access and Egress points.
- DOE-SRS Aviation Overflight Approval Request.
- Approved, unmarked 1:50,000 SRS Site Map(s).
- Exact training locations and facilities proposed for training.

Because of ongoing operations in South West Asia, Army units may request training opportunities within the 90, 60, 30 day planning period. Approvals of these short notice events are dependent upon consideration and approval by DOE-SR.

The USFS–SRS and Savannah River Ecology Lab (SREL)

The USFS-SR and SREL conduct various forest management, ecological, and environmental studies throughout SRS. Most of these studies have been ongoing since SRS was first created in the early 1950s. Therefore, years of environmental study and ongoing environmental research is critical to the protection of SRS wildlife, habitats, and federally protected species throughout the southeastern United States. The Army's desire is for these activities to continue in order to preserve the natural environment on SRS. Therefore, the Army is committed to as much interaction as possible to protect SRS natural habitat.

GIS Operations

The Fort Gordon ITAM Geographic Information System (GIS) Analyst has been working closely with USFS-SR GIS personnel to receive environmental data that was used to develop the EA and JSOP procedures. Some of the data received includes:

- RCW management Area
- Sensitive Plant Ranges
- Eagle Territorial Management Zones
- Archeological Sites
- Lakes, Wetlands, and Carolina Bays
- Contaminated areas
- DOE-Set Aside Areas
- No walk and access areas
- Cemeteries
- Waste Management Units

GIS data has been an extremely valuable tool in the development of a USFS – SRS Military Activity Map and Environmental Control Map, which define specific locations that are off limits to Army training activities. Maps will also be used to tailor each specific Army training activities such that they will not adversely affect SRS federally protected species. The Environmental Control Map will be updated as required.

Restricted Army Activities

Currently, the JSOP and EA prohibit the use of lethal ammunition or tracked vehicles, which are the most common activities that typically have the greatest impact to the natural environment.

Authorized Army Activities (Evaluation of Effects)

In general, Army training activities are limited to light infantry maneuver (foot traffic), wheeled vehicles, Army aviation, and training ammunition. Wheeled vehicles will be restricted to roads, improved graveled

roads which traverse throughout the site, or roads which are capable of handling military vehicles. These roads will be identified during the 60 /30 coordination meeting. Trails will only be used for foot traffic and not military vehicles. Roads and trails frequently used by the army will be alternated to reduce erosion of surface dirt and material.

Training ammunition will be used to simulate combat events. Examples of training ammunition are blanks, pyrotechnics, and simulated explosive devices. These training munitions do not fragment and when used in a safe environment will not directly impact natural resources. All expended training ammunition and residue will be policed by the Army prior to leaving SRS. Restrictions on certain training ammunitions have been implemented near certain federally protected specie locations. A good example is the RCW Management Area, referenced in this BE. Training activities may include the following:

- Light Infantry / SOCOM (Special Operations Command) Forces
- Air Assault Operations
- Reconnaissance / Surveillance
- Casualty Evacuation
- Airborne Operations
- Aerial Cargo Delivery
- Convoy Operations
- Combined air, land, and water operations (Infil and Exfil)
- Opposition Forces (OPFOR) (Insurgents)
- Urban / Military Operations on Urban Terrain (MOUT) Operations
- Fire Support (Towed)
- Rotary Wing Attack Aircraft Operations
- Special Operations Forces
- Force Protection – Weapons of Mass Destruction WMD), Chemical Biological (CBR), Nuclear Biological Chemical (NBC), in a training capacity, no active test agents or simulants will be used)
- FOB Operations
- Forward Air Refueling Point (FARP) Operations
- Refuel Operations (ROM)
- Unit Maintenance Collection Points (UMCP)
- Tactical Operations Centers (TOCs/CPs)
- Improvised Explosive Device (IED) / Vehicle Born IED / Homicide Bomber
- Breaching Operations (surface only, simulated explosives)
- Digging Operations in designated locations

Training Area Pre-Inspections

The FGRC-TFC will conduct a pre-inspection of all proposed training areas and facilities prior to Army units arriving on DOE-SR. The FGRC-TFC will notify the USFS-SR of any damage to forested areas and terrain found during the pre-inspection, not caused by the Army. During the pre-inspection, the FRGC-TFC will attempt to identify possible presence of federally protected specie that may have occupied locations inside Army training locations and not previously found on SRS.

Daily Training Area Inspections

FGRC-SRS personnel will inspect all Army training areas and facilities to identify maneuver damage caused by the military unit. At least than 3 days prior to units leaving DOE-SR, units will begin to repair maneuver damage such as rutting and trash removal.

Refueling Operations

Refueling operations are authorized on SRS. See Chapter 5, JSOP, for specific refueling procedures. Refueling is prohibited within 200 feet of protected species sites and wetlands.

Fuel Spills

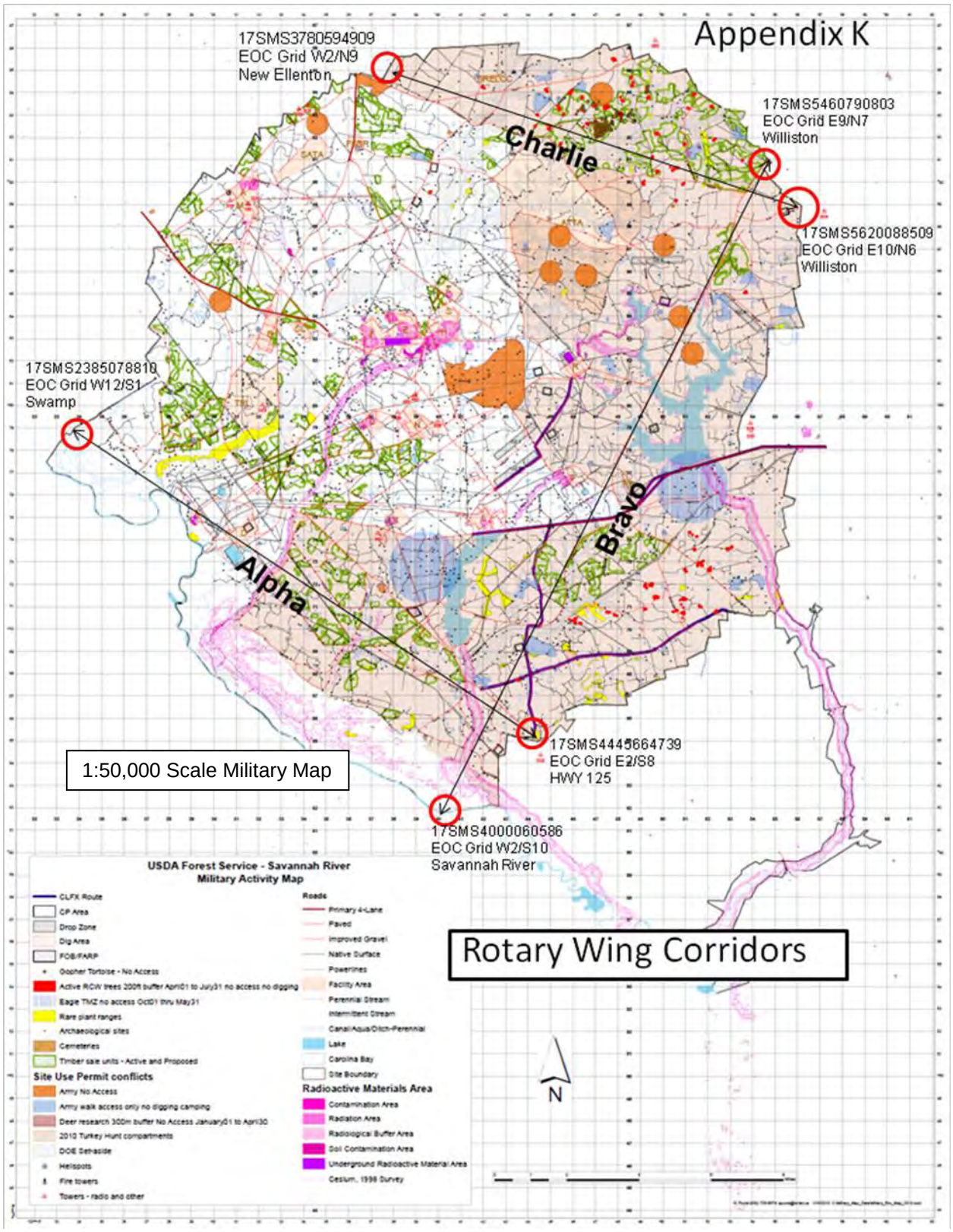
Units will immediately report all fuel spills on roads and training areas to FGRC-SRS. FGRC-SRS will notify SRSOC immediately of all spills regardless of size and if assistance is required for hazardous material recovery. Units should have dry fuel spill kits or dry sweep on hand to remove fuel spills from hard surfaced roads. Fuel spills in training areas or unimproved roads will be dug up, triple bagged, and removed from SRS by the unit.

Trash

Trash will be collected by the unit and disposed of using dumpsters or taken to Three Rivers Landfill.

Black Water

Units will use Port-a-lets for the disposal of human waste.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New Ellenton
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EOC Grid E9/N7
Williston
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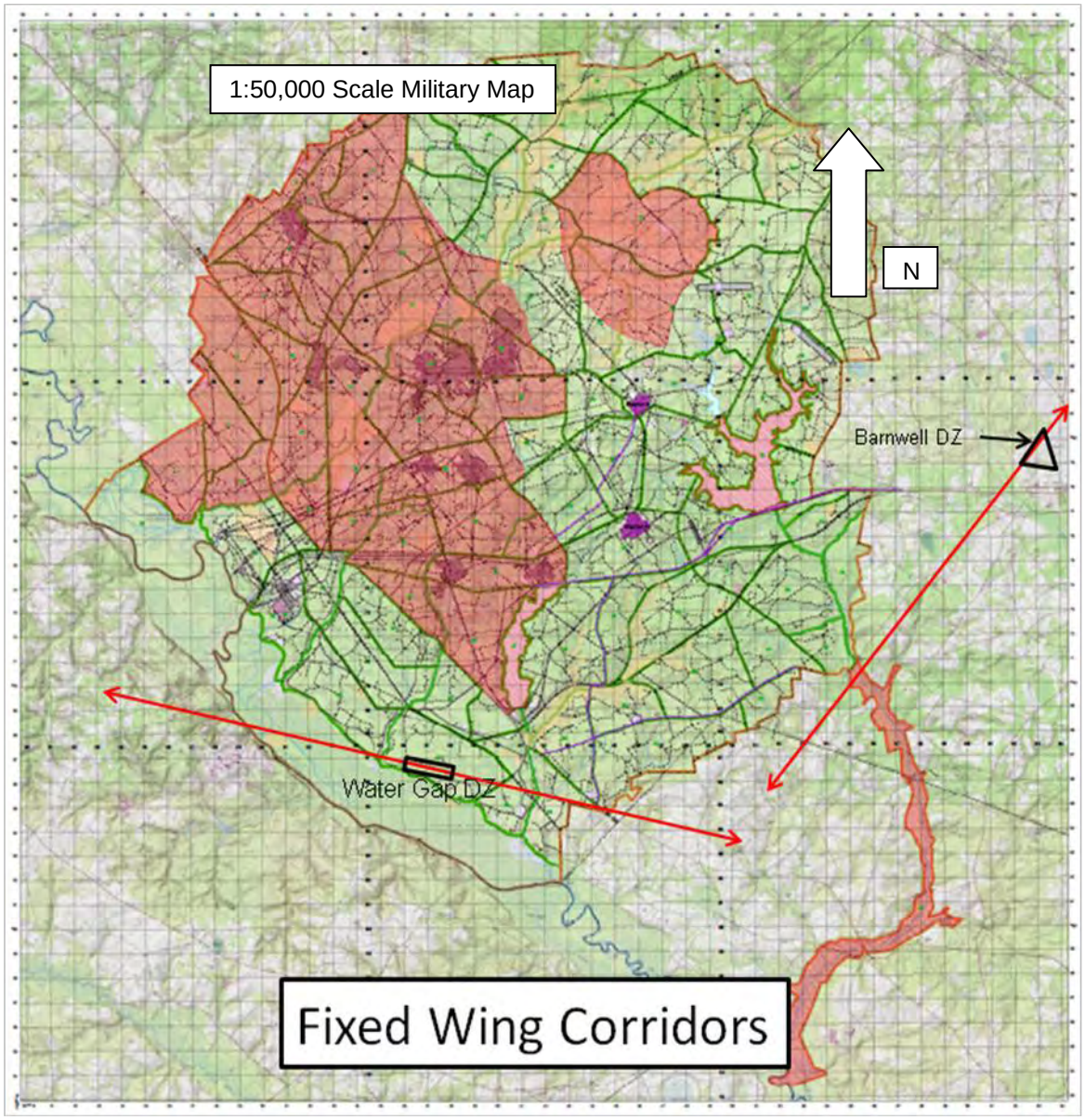
Williston
17SMS2385078810
EOC Grid W12/S1
Swamp
17SMS4445664739
EOC Grid E2/S8
HWY 125
17SMS4000060586
EOC Grid W2/S10
Savannah River
Charlie
Bravo
Alpha
1:50,000 Scale Military Map
Rotary Wing Corridors
USDA Forest Service - Savannah River
Military Activity Map
Site Use Permit conflicts
Roads
Radioactive Materials Area
N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Barnwell DZ
Water Gap DZ
Fixed Wing Corridors

The Red-cockaded Woodpecker

Basic Ecology and Population Dynamics

Red-cockaded woodpeckers are a cooperatively breeding species, living in family groups that typically consist of a breeding pair with or without one or two male helpers. Females may become helpers, but do so at a much lower rate than males. The ecological basis of cooperative breeding in this species is unusually high variation in habitat quality, due to the presence or absence of a critical resource, the cavities that red-cockaded woodpeckers excavate in live pines. Cavity excavation may take years to complete (RCW Recovery Plan 1979).

Red-cockaded woodpeckers exploit the ability of live pines to produce large amounts of resin by causing the cavity tree to exude resin through wounds, known as resin wells that the birds keep open. This resin creates an effective barrier against climbing snakes. Longleaf pine is a preferred tree species for cavity excavation because it produces more resin for a longer period of time than other southern pines. Group living has a profound influence on RCW population dynamics. In noncooperatively breeding birds, breeders that die are replaced primarily by the young of the previous year. Thus, variation in reproduction and mortality can have strong, immediate impacts on the size of the breeding population. However, in RCWs and other cooperative breeders, a large pool of helpers is available to replace breeders. As a result, the size of the breeding population is not strongly affected by how many young are produced each year, or even on how many breeders may die. Therefore, the number of potential breeding groups (PBG) rather than number of individuals is used as the measure of population size. A PBG comprises an adult female and adult male that occupy the same cluster, with or without helpers, regardless of whether they attempt to nest or successfully fledge young (RCW Recovery Plan).

Habitat Requirements and Limiting Factors

Red-cockaded woodpeckers require open pine woodlands and savannahs with large old pines for nesting and roosting habitat (clusters). Large old pines are required as cavity trees because the cavities are excavated completely within inactive heartwood, so that the cavity interior remains free from resin that can entrap the birds. Also, old pines are preferred as cavity trees, because of the higher incidence of heartwood decay that greatly facilitates cavity excavation. Cavity trees are in open stands with little or no hardwood midstory and few or no hardwoods. Hardwood encroachment resulting from fire suppression is a well-known cause of cluster abandonment. Red-cockaded woodpeckers also require abundant foraging habitat. Suitable foraging habitat consists of mature pines with an open canopy, low densities of small pines, little or no hardwood or pine midstory, few or no overstory hardwoods (RCW Recovery Plan).

Research shows that RCWs in native ground cover are more productive. Limiting factors are those that directly affect the number of PBGs because this is the primary determinant of population size and trend. Several factors currently impact the persistence of PBGs. Foremost among these are the factors that limit suitable nesting habitat, namely fire suppression and lack of suitable cavity trees. Fire suppression has resulted in loss of PBGs throughout the range of the RCW, because the birds cannot tolerate the hardwood encroachment that results from lack of fire. This limitation is addressed through the use of frequent prescribed burning, with most burns conducted during the growing season because growing season fires are more effective at killing hardwoods. Lack of cavity trees and potential cavity trees limits the number of PBGs in most populations. This limitation is addressed in the RCW Recovery Plan Executive Summary. In the short term, cavity management tools such as artificial cavities and restrictor plates will stabilize and increase RCW populations. Over the long-term, managing for abundant large old trees will ensure that there are sufficient suitable cavity trees. Another factor directly limiting the number of PBGs is habitat fragmentation and consequent isolation of groups, which results in disrupted dispersal of helpers and failure to replace breeders. This limitation is best addressed through the appropriate placement of clusters of artificial cavities, and implementation of silvicultural practices that minimize fragmentation such as single or small group tree selection. There are several other threats to the existence and recovery of the species that do not limit most population, but which will become more

important as the current limitations are addressed. Chief among these are (1) degradation of foraging habitat through fire suppression and loss of mature trees, and (2) loss of valuable genetic resources because of small size and isolation of populations (genetic drift and inbreeding). As limiting factors such as lack of cavities are relieved, the continued growth and natural stability of RCW populations will depend on abundant, good quality foraging habitat and careful conservation of genetic resources (RCW Recovery Plan).

Population and Species Viability

Four types of threats to species and population viability have been identified: genetic stochasticity (consisting of both inbreeding and genetic drift), demographic stochasticity, environmental stochasticity, and catastrophes. We now have some knowledge of population sizes of RCWs necessary to withstand these extinction threats, primarily from research performed with a spatially explicit, individually based simulation model of population dynamics developed specifically for this species (RCW Recovery Plan).

Red-cockaded woodpeckers exhibit inbreeding depression and inbreeding avoidance behaviors. Effects of demographic stochasticity on population viability vary with the spatial arrangement of groups. Populations as small as 25 PBGs can be surprisingly resistant to random demographic events, if those groups are highly aggregated in space. Populations as large as 100 potential breeding groups can be impacted by demographic stochasticity, if groups are not aggregated and dispersal of helpers is disrupted. Demographic stochasticity is not expected to affect populations larger than 100 PBGs. Similarly, effects of environmental stochasticity vary with the spatial arrangement of groups (RCW Recovery Plan).

Loss of genetic variation through the process of genetic drift is an inevitable consequence of finite population size. New genetic variation arises through the process of mutation. In large populations, mutation can offset loss through drift and genetic variation is maintained. Just how large a population must be to maintain variation is a difficult question. Currently, researchers recognize that in general, only populations with actual sizes in the thousands, rather than hundreds, can maintain long-term viability and evolutionary potential in the absence of immigration. However, if populations are connected by immigration rates on the order of 1 to 10 migrants per generation (0.5 to 2.5 migrants per year); the genetic variation maintained by these populations is equal to that of 1 population as large as the sum of the connected populations. Thus, sufficient connectivity among populations can maintain genetic variation and long-term viability for the species (RCW Recovery Plan).

Reasons for Listing

The RCW was listed as endangered in 1970 (35 Federal Register 16047) and received federal protection with the passage of the ESA in 1973. Once a common bird distributed continuously across the southeastern United States, by the time of listing the species had declined to fewer than 10,000 individuals in widely scattered, isolated, and declining populations. This precipitous decline was caused by loss of habitat. Fire maintained old growth pine savannahs and woodlands that once dominated the southeastern United States and on which the woodpeckers depend, no longer exist except in a few small patches. Longleaf pine (*Pinus palustris*) ecosystems, of primary importance to RCWs, are now among the most endangered ecosystems on earth. Mature shortleaf (*P. echinata*), loblolly (*P. taeda*), and slash pine (*P. elliottii*) ecosystems, important to RCWs outside the range of longleaf, also have suffered severe declines. Loss of the original pine ecosystems was primarily due to intense logging for lumber and agriculture. Logging was especially intense at the turn of the century. Two additional factors resulting in the loss of original pine systems in the 1800s and earlier were exploitation for pine resins and grazing by free-ranging hogs (RCW Recovery Plan).

Later, in the 1900's, fire suppression and detrimental silvicultural practices had major impacts on primary ecosystem remnants, second-growth forests, and consequently on the status of RCWs. Longleaf pine suffered a widespread failure to reproduce following initial cutting, at first because of hogs and later because of fire suppression (RCW Recovery Plan).

RCW on Military Military Installations

Current Status and Trends
At present there are 15 military installations harboring red-cockaded woodpeckers (see map insert and Table 7), ranging from 1 active cluster on Charleston Naval Weapons Station to 301 active clusters on Eglin Air Force Base and 350 active clusters on Fort Bragg. (RCW Recovery Plan)
The Fort Bragg Natural Resources Team (NRT) won a Secretary of the Army Sustainability Award in 2008, which was presented by the USFWS RCW Recovery Program Awards for outstanding accomplishments contributing to the successful recovery of the federally-listed RCW (FY 2009 Secretary of Defense Environmental Awards).

Fort Stewart, one of the closest military installations to SRS, is located in Hinesville, Georgia, and is home to the 3rd Infantry Division. Fort Stewart supports 4 brigades of M1A1 tanks, Bradley fighting vehicles and an assortment of fixed and rotary wing aircraft as well as other heavy wheeled support vehicles. Fort Stewart also supports hundreds of National Guard, reserve, and armed services units such as naval, marine, and law enforcement units. Fort Stewart is currently has 337 active RCW clusters and 325 PBGs (See attached slide page 25).

Rates of increase reported from Marine Corps Base Camp Lejeune and Fort Stewart during the 1990's are among the highest yet documented (in the absence of translocation), an encouraging result of intensive, well-planned, and well-executed management (RCW Recovery Plan).

Army RCW Responsibilities

The U.S. Army is one of the lead stewards in RCW conservation. Since implementation of the ESA, the Army has contributed immensely to the conservation of RCW habitat, protection of clusters, and provides critical awareness training to soldiers to assist in protecting and enforcing RCW management policies. Forts Gordon and Stewart, GA are examples of the Army's successful management of RCW populations See RCW population growth charts on pages 22 – 24 for both Army installations.

Provided with this BE are four documents which address management practices and studies of military training on prime RCW habitat located at Fort Stewart, Georgia.

The first document is provided by Larry Carlisle, Fort Stewart, Georgia, Fish and Wildlife Biologist titled, *"Success of the Army's 1996 Red-Cockaded Woodpecker Guidelines."* The reason for providing this information is to address how the Army strives to preserve the habitat, not only of the Red-cockaded woodpecker, but of other species of animals. At the same time, provide critical training land for commanders charged with the responsibility of training their soldiers to the highest standards. The reader should grasp the incredible amount of dedication, time, and effort into protecting RCW habitat on Fort Stewart.

The second document is from the U.S. Army Corps of Engineers (USACE), Engineer Research and Development Center, Final Report titled, "*Assessment of Training Noise Impacts on the Red-cockaded Woodpecker"*. The purpose of this research was to assess the effects of military training noise on the endangered Red-cockaded Woodpecker (RCW) and to develop assessment methodology. Experiments tested RCW response in 1999 and 2000 (during the breeding season) to controlled military training noise events under realistic conditions, namely .50-caliber blank fire and artillery simulators. From 1998-2000, passive (i.e., no control over the noise source) monitoring of RCW response to various military training noise events. Measuring of both proximate response behavior and nesting success, while continuing to measure baseline behavioral data from undisturbed RCW groups. Measured levels of experimental noise did not affect RCW nesting success or productivity. RCW flush response increased as stimulus distance decreased, regardless of stimulus type. It is important to note that woodpeckers returned relatively quickly after flushing from the nest, with return times being comparable between 1999 and 2000 rates. Un-weighted noise levels within RCW nest cavities were substantially louder than levels recorded at the base of the tree. When noise data were examined using Woodpecker weighting (dBW), noise levels inside nest cavities were not significantly different compared with levels recorded outside the nest cavity. This report

provides definitive proof that RCW habitat can coexist in the midst of one the south east's largest military installations, Fort Stewart, located in Liberty County, Georgia. Fort Stewart is home to the U.S. Army's 3rd Infantry Division (3ID). The 3ID provides live fire and maneuver training land for hundreds of tanks, Bradley fighting vehicles, self propelled artillery, and various aviation fixed and rotary wing aircraft. This report studied the effects of various weapons fire, vehicle, and aircraft traffic near RCW populations. Some of these weapons included large caliber direct fire weapons. Blank weapons fire and pyrotechnic simulators were also used as part of the study. It is important to note that these same blank weapons and pyrotechnic fire is proposed for used at SRS. As different noises from weapons, aircraft, and vehicles were introduced to RCW nests at varying distance, the RCW nest was monitored to see if the bird flushed and if the bird returned. This report proves for those birds that flushed, all returned to their nests or adjusted to the presence specific training activities, which includes very large caliber weapons. The conclusion states, *during this study we observed and documented experimental training noise events and the resulting RCW responses under realistic conditions. Both proximate response behavior and nesting success were measured. We also observed RCW behavior and nesting success for groups where noise stimuli were absent or minimal (near or below ambient sound levels), to provide an undisturbed behavior baseline to judge response and impact against. No significant differences in nesting success or productivity were found between experimentally disturbed and relatively undisturbed RCW groups.*

The third document is also from the USAEC, titled, "Assessments of Effects of Maneuver Training Activities of Red-cockaded Woodpecker Populations of Fort Stewart, Ga." Results from this study on Fort Stewart, Georgia during 1997-1999 indicate that demographic factors (e.g., group size and prior reproductive success) have more effect on RCW reproductive success than habitat and/or disturbance from human activities. The conclusion states, *population viability modeling indicates that at the present time potential disturbance effects in this small proportion of the population have negligible effect on the viability of the Fort Stewart RCW population.* An important part of this study shows virtually no effect to RCW habitat during nesting and non-nesting periods in relation to military activity.

The Fourth document is an aerial photo which shows the TES species which have been observed on Fort Stewart training lands and water ways. They are the RCW, wood stork, short nosed sturgeon, bald eagle, and gopher tortoise. Most notably presented on the photo are the numerous RCW trees which are prevalent throughout Fort Stewart. A significant amount of these trees are found adjacent to or directly inside the installation artillery impact areas (AIA) and small arms impact area (SAIA). This is definitive proof that RCW adapt and adjust to the presence of very large and very loud military weapons systems.

RCWs on the SRS

The SRS was divided into 3 management areas per the SRS RCW Management Plan. They are the RCW Management Area, the Supplemental RCW Management Area, and other use areas in which timber management and facility development will be given priority (page 20) Red-cockaded woodpeckers will not be actively managed in this area (US-DOE NRMP May 2005).

SRS Habitat Management Areas

SRS RCW Management and Monitoring

US Department of Agriculture Forest Service – Savannah River Site (USFS-SR) manages the natural resources at the SRS. Specific Resource management objectives and strategies are described within the SRS Natural Resource Management Plan and associated operations plans (USFS-SR 2005).

RCW breeding occurs April through July. Translocations of juvenile RCWs occur in the fall of the year but would only occur approximately once during the year. The USFS-SR bands RCW nestlings. RCW cavity trees are marked painted with a single white or yellow band (U.S. Army / DOE JSOP) (RCW Recovery Plan).

Description of the RCW Population on SRS

The RCW population at SRS consisted of 50 active groups during the 2008 breeding season. An analysis of current suitable habitat conditions, given current rotation lengths and thinning strategies, suggests that the short-term population objective will not be limited by habitat.

The SRS RCW population is identified as 1 of 10 secondary core populations in the RCW Recovery Plan. For the RCW to be de-listed, 9 of the 10 secondary core populations must establish a viable population of 250 PBGs, without dependence on the installation of artificial cavities. Because not all PBGs breed each year, 275 to 350 total PBGs are needed to achieve minimum viable population size of 250 PBGs. To meet these goals, a long-term target of 418 PBGs was set. In the role of a secondary core population, RCWs from the SRS are available to augment or to enhance the genetic diversity of other RCW populations and to provide onsite research opportunities to address questions of region-wide interest. SRS will serve as a repository for mitigated RCWs and provide suitable habitat for birds dispersing from nearby populations. USFWS recommends that federal properties with adequate habitat to support more than 250 PBGs establish population goals based on the potential carrying capacity of their properties.

The RCW Management Area contains 65,140 acres of potentially suitable habitat for the RCW and the Supplemental RCW Management Area contains 32,981 acres of potentially suitable habitat. The carrying capacity in the RCW Management Area was established at 326 (65140/200=325.7) groups, assuming a density of 1 RCW per 200 acres of suitable habitat; the Supplemental RCW Management Area has a carrying capacity of 123 109 (32981/300=109) groups, assuming a density of 1 group per 300 acres.

The lower expected density in the Supplemental RCW Management Area is based upon the shorter timber rotation, lower fire frequency, etc., resulting in lower habitat quality, and therefore, larger territory sizes. The population objective is slightly less than the expected carrying capacity in each management area to provide for habitat variability and flexibility for future land use. The remainder of the SRS is not expected to support any RCW groups. Based upon the current population and a 5% growth rate, the SRS recovery objective is projected to be met within about 50 years (B.E. for RCW, Ray 2009).

SRS POPULATION AND NESTING MANAGEMENT

There are no changes in operational population and nesting habitat management because of the proposed Army training activities (B.E. for RCW, Ray 2009).

SRS RCW FORAGING HABITAT

Current RCW forage requirements for federal lands are specified in the RCW Recovery Plan (p. 186-197) and the USFWS 2005 Memorandum “Implementation Procedures for Use of Foraging Habitat Guidelines and Analysis of Project Impacts under the Red-cockaded Woodpecker (*Picoides borealis*) Recovery Plan: *Second Revision* 2005.”

Foraging habitat must be contiguous (not being separated from the cluster center by more than 200 feet of non-foraging areas) within 0.5 miles of the cluster center, and at least half (i.e., 60 acres) should be within 0.25 miles of the cluster center. Management activities will be implemented to move the current habitat conditions toward the desired future conditions for RCW foraging habitat described below (B.E. for RCW, Ray 2009).

SRS Objective: Improve RCW group fitness by providing 120-200 acres of foraging habitat per RCW group (B.E. for RCW, Ray 2009).

SRS Strategy: Employ silvicultural systems and techniques to move the foraging habitat toward the desired future condition for forage. (B.E. for RCW, Ray 2009)

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2007 Management Guidelines for the Red-cockaded Woodpecker on Army Installations

The purpose of these guidelines are to provide standard Red-cockaded Woodpecker (RCW) management guidance to Army installations for developing endangered species management components (ESMCs) for the RCW as part of an installation’s integrated natural resource management plan (INRMP). Terminology has been revised from endangered species management “plans” to

"components" to reflect that endangered species management on installations is an integral component of natural resource management activities on Army installations. Installation RCW ESMCs will be prepared according to these guidelines and chapter 11, AR 200-3, Natural Resources – Land, Forest, and Wildlife Management and subsequent policies and guidance published by the Army. These guidelines establish the baseline standards for Army installations in managing the RCW and its habitat. Installation RCW ESMCs will supplement these guidelines with detailed measures to meet installation-specific RCW conservation needs and unique military mission needs. The requirements in RCW ESMCs will apply to all activities on the installation.

The guidelines are applicable to Army installations where the RCW is present. These guidelines replace 1996 Management Guidelines for the Red-cockaded Woodpecker on Army Installations, 30 October 1996.

These guidelines are revised as necessary to be consistent with the 2003 U.S. Fish and Wildlife Service (USFWS) RCW Recovery Plan and to incorporate the latest and best scientific data available. These guidelines are the third major revision. Previous guidelines were dated 30 October 1996, 21 June 1994 and 1986.

The Army's goal is to implement management guidelines which will allow the Army to accomplish military readiness missions while concurrently developing and implementing methods to assist in the conservation, down listing, and recovery of the RCW.

Installation and tenant unit mission requirements do not justify violating the ESA. Mission considerations are necessary in determining the installation management and recovery goals. The keys to successfully balancing mission and conservation requirements are long term planning and effective RCW management to prevent conflicts between these interests.

How the Army protects RCW habitat on SRS will be slightly different than as outlined in the 2007 Red-cockaded woodpecker guide lines. Most soldiers are familiar with training in and around RCW habitat. Therefore, the protection of RCW clusters and cavity trees will not be hard to manage (2007 Army RCW Guidelines).

Marking of Cavity Trees on SRS

Cavity trees on SRS are marked with a single white or yellow band, which is different from how Army Installations mark RCW cavity trees with two white bands. Some, but not all, RCW clusters on SRS are identified by with signs depicting a RCW (U.S. Army / DOE JSOP) (Draft EA, 2010) (B.E. for RCW, Ray 2009).

Military Training Restrictions for the RCW on the SRS

The best way for Army units to identify RCW cavity trees is through education during the unit orientation briefing prior to commencement of training. Units will also be provided locations of RCW clusters during the orientation (U.S. Army / DOE JSOP) (Draft EA, 2010).

The Army guidelines for training within RCW habitat allows certain activities to occur with 200 feet of a cavity tree. Because there is 120,000 acres of land available for training, the FGRC-TFC has amended the guidelines to meet SRS RCW growth and protective actions for RCW habitat. Once additional RTLA is budgeted for SRS, proper signage and tree markings for RCW habitat should be initiated on SRS to meet 2007 RCW Army Guidelines. The FGRC-TFC has restricted all training within 200 feet of any RCW cavity tree (U.S. Army / DOE JSOP) (Draft EA, 2010).

The purpose of training restrictions associated with RCW clusters is to avoid or minimize the potential for "take" as defined under section 9 under the ESA. At the same time, this restriction imposed by the FGRC-TFC, should not affect training activities for commanders charged with the training of soldiers.

Blank ammunition will not be used within the 200 feet of RCW cavity trees. All soldiers participating in training on SRS will be instructed on the presence of the RCW habitat and modifications of guidelines imposed by the FGRC-TFC (U.S. Army / DOE JSOP) (Draft EA, 2010).

Soldiers will be provided with a brochure that describes all TES on SRS; foremost will be the RCW and its habitat. Maps detailing RCW habitat will be issued to units prior to arrival at SRS. This will allow units to develop training strategies around RCW clusters.

Military training within marked cavity tree buffer zones is limited to military activities of a transient nature. Military vehicles are prohibited from occupying a position or traversing within 200 feet of a marked cavity tree, unless on an existing road. Soldiers on foot may transit through RCW 200 foot buffers but are not allowed to stop for any reason (U.S. Army / DOE JSOP) (Draft EA, 2010).

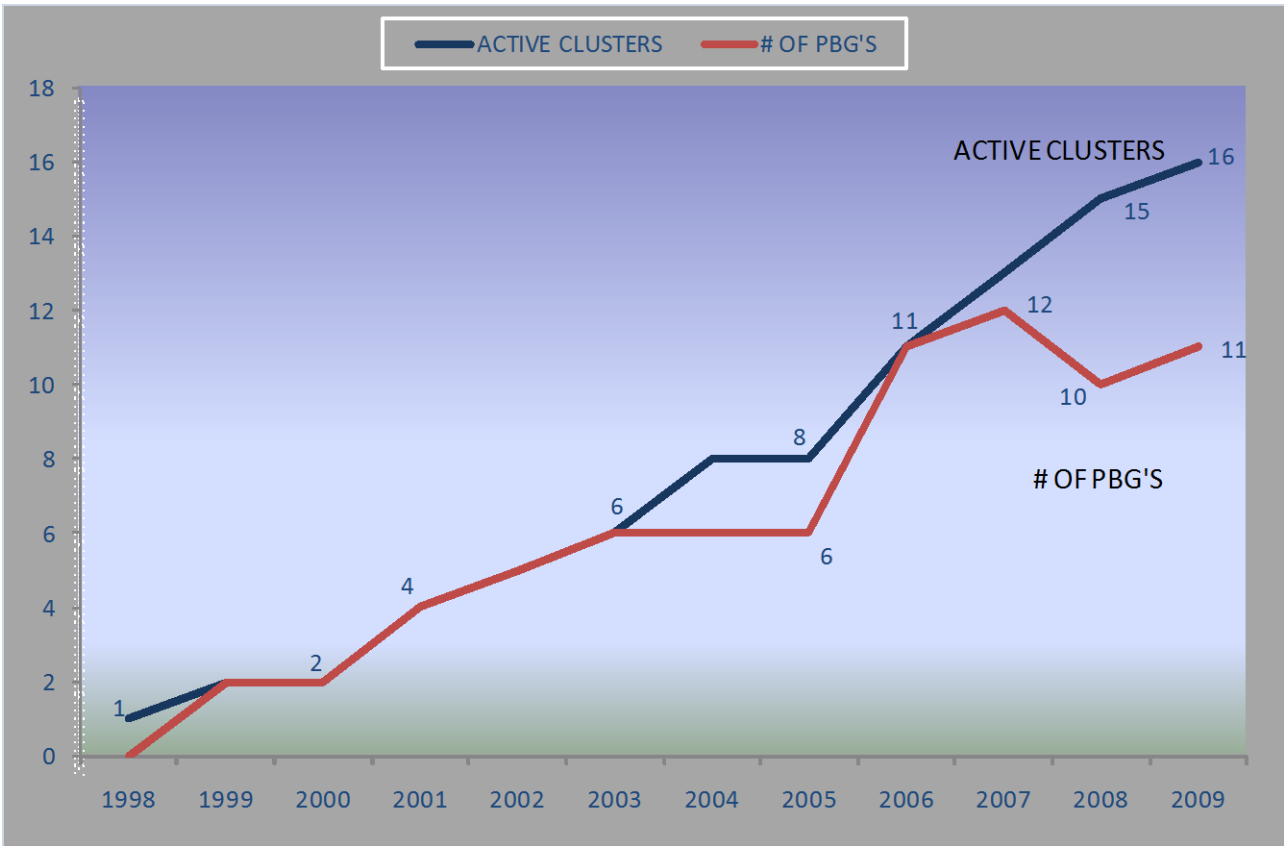
Aside from what is written in the JSOP and Draft EA for Army training on SRS; the Red-Cockaded Recovery Plan Guidelines to protect existing cavity trees recommends reducing human disturbance as much as possible, but recommends restricting vehicle use to existing roads and avoiding construction of new roads and trails (for motorized and un-motorized use) within clusters (RCW Recovery Plan).

Military personnel are prohibited from cutting down or intentionally destroying pine trees unless the activity is approved previously by the SRS biologist and/or forester and is authorized for tree removal. Hardwoods may be may not be cut and used for camouflage or other military purposes. Only manmade camouflage netting will be used (U.S. Army / DOE JSOP).

Units will immediately report to FGRC personnel on SRS, known damage to any marked cavity or cavity start tree and/or any known extensive soil disturbance in and around RCW clusters. Training units will as soon as practicable (normally within 72 hours) repair damage to training land within a cluster to prevent degradation of habitat.

Digging on SRS is authorized in approved locations. All digging for military training activities in suitable acreage will be filled within a reasonable time after the completion of training. Training Guidelines will be actively enforced through installation training and natural resources enforcement programs, the SRS EA, the JSOP, and training activities coordinated and approved by DOE-SR (U.S. Army / DOE JSOP) (Draft EA, 2010).

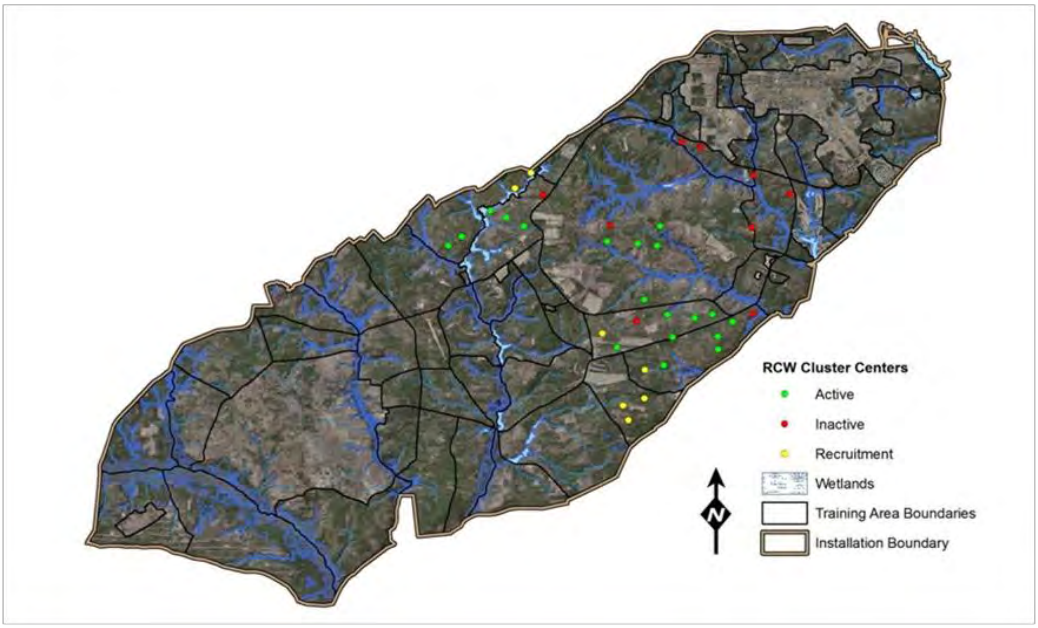
Fort Gordon Red-Cockaded Population Growth



Current 2010 population metrics have increased to 13 PBGs and 19 active clusters.

Fort Gordon Red-Cockaded Woodpecker Clusters

Fort Gordon, Georgia



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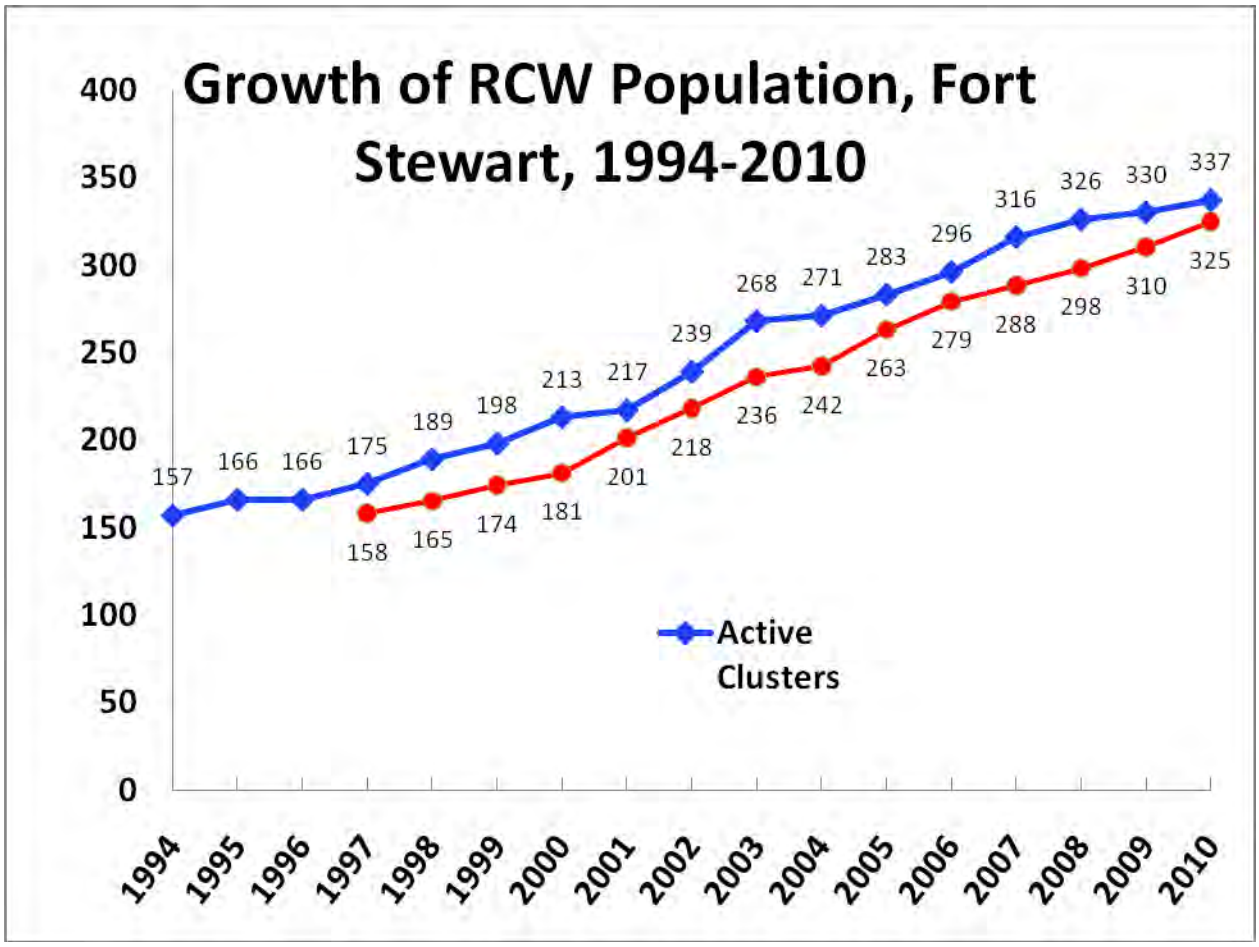
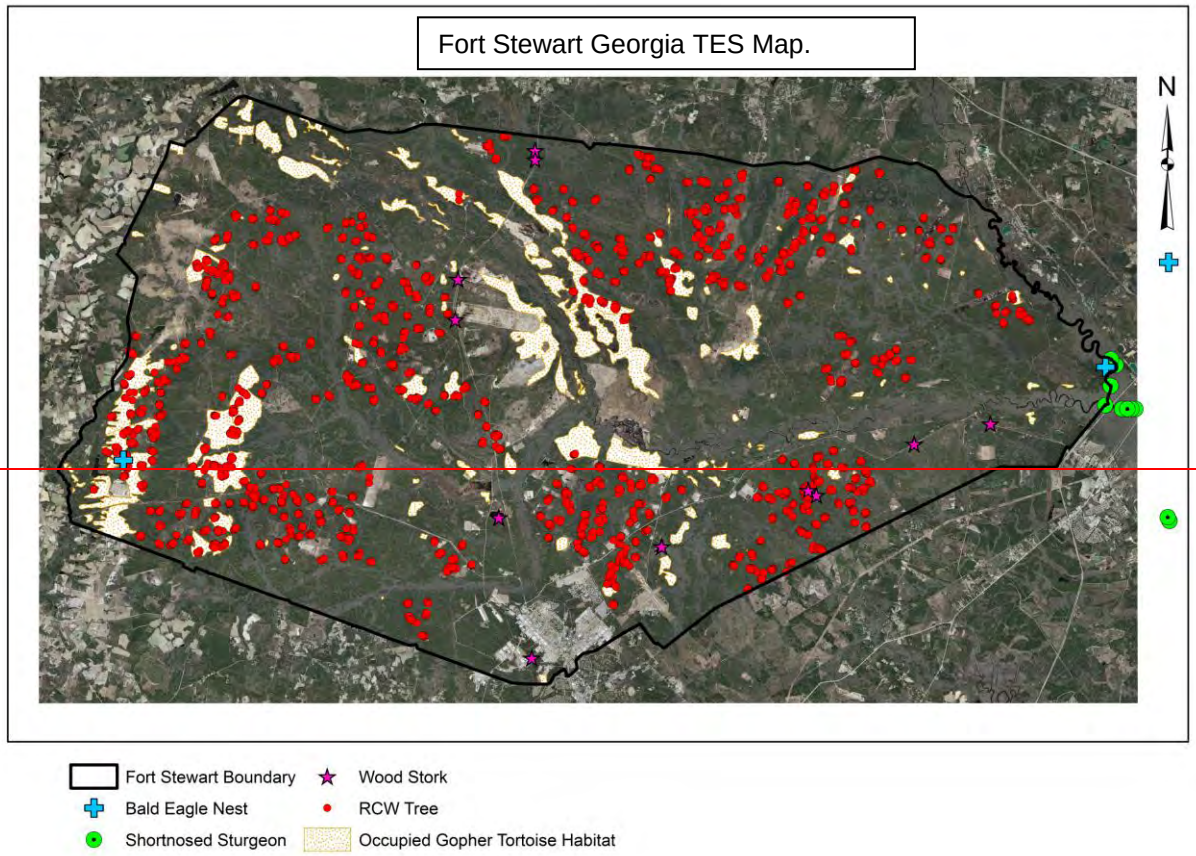
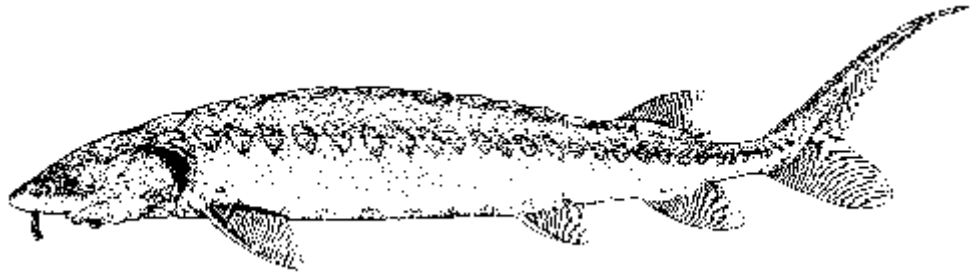

Growth of RCW Population, Fort Stewart, 1994-2010
400
350
300
250
200
150
100
50
0
157
166
166
175
189
198
213
217
239
268
271
283
296
316
326
330
337
158
165
174
181
201
218
236
242
263
279
288
298
310
325
Active Clusters
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010


Fort Stewart Georgia TES Map.
N
Fort Stewart Boundary
Wood Stork
Bald Eagle Nest
RCW Tree
Shortnosed Sturgeon
Occupied Gopher Tortoise Habitat

The Shortnosed Sturgeon



Shortnosed Sturgeon research was developed by consulting with Dr. Stephania Bolton of NOAA and the Final Recovery Plan for the Shortnosed Sturgeon (*Acipenser brevirostrum)* (1998).

Proposed Military Training Activities

- Combat Rubber Raiding Craft (CRRC) (Paddle and Motor driven).
- Helocast Operations. Insertion of CRRC from Helicopter by sling or from the cabin crew of cargo door into the river.
- Bucket Training; Helicopters submerge large buckets (780 gallon) into the Savannah River, drawing water through valves. Water buckets are used to extinguish wild-land fires.
- Self-contained Underwater Breathing Apparatus (SCUBA).

Army waterborne training activities will be limited to approximately 11 miles of the Savannah River near the SRS (U.S. Army / DOE JSOP).

Current Species Status

The shortnosed sturgeon (*Acipenser brevirostrum*) was listed as endangered on March 11, 1967 (32 FR 4001). Shortnosed sturgeon remained on the endangered species list with enactment of the ESA in 1973. Although originally listed as endangered range wide, the NMFS recognizes 19 distinct population segments. 4 Segments in South Carolina and 4 segments in Georgia have been found, mostly along the Savannah River (Final Recovery Plan / Shortnosed Sturgeon. Dec., 1998).

Habitat Requirements and Limiting Factors

Shortnosed sturgeons inhabit the main stems of their natal rivers, migrating between freshwater and Mesohaline River reaches. Spawning occurs in upper, freshwater areas, while feeding and overwintering activities may occur in both fresh and saline habitats. Habitat degradation or loss (resulting, for example, from dams, bridge construction, channel dredging, and pollutant discharges), and mortality (for example, from impingement on cooling water intake screens, dredging, and incidental capture in other fisheries) are principal threats to the species' survival (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

Legislative Background

Shortnosed sturgeon were originally listed as an endangered species by the FWS on March 11, 1967 under the Endangered Species Preservation Act (32 FR 4001, Appendix I). The NMFS later assumed jurisdiction for Shortnosed sturgeon under a 1974 government reorganization plan (38 FR 41370). Although the original listing notice did not cite reasons for listing the species, a 1973 Resource Publication (Appendix II), issued by the U.S. Department of Interior, stated that shortnosed sturgeon were “in peril ... gone in most of the rivers of its former range [but] probably not as yet extinct" (USDOI 1973). Pollution and overfishing, including by catch in the shad fishery, were listed as principal reasons for the species' decline. In the late nineteenth and early twentieth century’s shortnosed sturgeon

commonly were taken in a commercial fishery for the closely related, and commercially valuable, Atlantic sturgeon (*Acipenser oxyrinchus*). Catch statistics did not differentiate the 2 species. Some mis-identifications occurred (Ross et al. 1988) because, at smaller sizes, Atlantic sturgeon are easily confused with shortnosed sturgeon unless diagnostic features are recognized. Because there are few confirmed historical reports of shortnosed sturgeon captures and because fishermen and scientists did not distinguish between the two species in scientific reports and landing records, there are no reliable estimates of historical population sizes. More than a century of extensive fishing for sturgeon contributed to the decline of Atlantic and shortnosed sturgeon populations along the east coast. Heavy industrial development during the twentieth century in rivers inhabited by sturgeon impaired water quality and impeded these species' recovery; possibly resulting in substantially reduced abundance of shortnose sturgeon populations within portions of the species' ranges (e.g., southernmost rivers of the species range: Satilla, St. Mary's, and St. Johns Rivers). Congress passed the ESA to provide protection for species threatened with extinction. Pursuant to Section 4(f) (1) of the ESA, the NMFS and the USFWS are required to develop and implement recovery plans "for the conservation and survival of endangered species and threatened species" unless a recovery plan would not help to promote species conservation. Highest priority is given to those species that are or may be in conflict with development projects or other commercial activities. Shortnosed sturgeon spends their entire life in waters that are heavily impacted by various construction and industrial activities (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

The Savannah River

The Savannah River is a heavily industrialized and channelized drainage that forms the South Carolina/Georgia border. The river is dammed, but not below the fall line. Shortnosed sturgeon were first documented in the system in the mid-1970s. During 1984-1992, over 600 adults were collected by shad fishermen and researchers using gillnets and trammel nets. The ratio of adults to juveniles in this study was very high, indicating that recruitment is low in this river. During 1984-1992, approximately 97,000 shortnosed sturgeon (19% tagged) of various sizes were stocked in the Savannah River to evaluate the potential for shortnosed sturgeon stock enhancement. Subsequent investigation showed that stocked fish were at large for an average of 416 days and comprised 41% of all juvenile sturgeon collected (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

Bathymetry

Copies of Shortnosed sturgeon known spawning locations and habitat can be found in the attachments (Dr. Stephania Bolden, NOAA). See page 34 and 35.

Biological Characteristics

Habitat and Life History

Shortnosed sturgeon are found in rivers, estuaries, and the sea, but populations are confined mostly to natal rivers and estuaries. The species appears to be estuarine anadromous in the southern part of its range, but in some northern rivers it is "freshwater amphidromous", i.e., adults spawn in freshwater but regularly enter saltwater habitats during their life. Adults in southern rivers forage at the interface of fresh tidal water and saline estuaries and enter the upper reaches of rivers to spawn in early spring on the Savannah River; February through April. The use of saline habitat varies greatly among northern populations (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

Early Life Stages

At hatching, shortnosed sturgeon are blackish-colored, 7-11 mm long, and resemble tadpoles. Hatchlings have a large yolk-sac, poorly developed eyes, mouth and fins, and are capable of only "swim-up and drift" swimming behavior. They are ill-equipped to survive as free-swimming fish in the open river.

In 9-12 days shortnosed sturgeon absorb the yolk-sac and develop into larvae at about 15 mm TL

Larvae have well-developed eyes, a mouth with teeth, and fins capable of normal swimming. In the wild, larvae of this size probably migrate downstream. Larvae collected in rivers were found in the deepest water, usually within the channel (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

Juveniles

Juveniles (3-10 year olds) occur in at the saltwater/freshwater interface on the Savannah River. Juveniles move back and forth in the low salinity portion of the salt wedge during summer. Juveniles in the Savannah River use sand/mud substrate in 10-14 m depths. Warm summer temperatures (above 28°C) may severely limit available juvenile rearing habitat in some southern rivers (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

Adults

Adult sturgeon occurring in freshwater or freshwater/tidal reaches of rivers in summer and winter often occupy only a few short reaches of the total river length. Summer concentration areas in southern rivers are cool, deep, thermal refugia, where adults and juveniles congregate (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

Reproduction - Length and age at maturity

Length at maturity (45 - 55 cm FL) is similar throughout the shortnosed sturgeon's range, but because fish in southern rivers grow faster than those in northern rivers, southern fish mature at younger ages. Males spawn first at 2-3 years in Georgia, 3-5 years in South Carolina. Females first spawn at 6 years or less in the Savannah River. Most shortnosed sturgeon probably survives spawning, although there is some post-spawning mortality. Known spawning locations are north of proposed Army training locations on the Savannah River near SRS. There are no known spawning locations adjacent to SRS at this time (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

Spawning Periodicity

Spawning periodicity is poorly understood, but males seem to spawn more frequently than females. At least some males and females in the Savannah River may spawn in consecutive years but most apparently do not (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

Spawning behavior

The Shortnosed sturgeon spawning period is estimated to last from a few days to several weeks. Sturgeon in the Savannah River remained on the spawning grounds for 2-3 weeks. Males fertilize the female's eggs as the eggs are released close to the substrate (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

Spawning Habitat

Information on the location and type of river reach used for spawning is available for many rivers. Channels are important for spawning in many rivers. Characteristic channel spawning habitats vary slightly among rivers; in curves with gravel/sand/log substrate in the Savannah River (Final Recovery Plan, Shortnosed December 1998).

Spawning timing and river conditions

Spawning begins in freshwater from late winter/early spring (southern rivers). Spawning usually ceases when water temperatures reach 12-15°C. However, shortnosed sturgeon may spawn at higher

temperatures. For example, spawning occurs in early-February to April in the Savannah River (Figures page 34 and 35) (Final Recovery Plan, December 1998).

Survival and Recruitment

There is no information on survival of eggs or early life stages in the wild. Year class strength of shortnosed sturgeon populations is probably established early in life, perhaps in the initial few weeks. Although there is no commercial fishery for shortnosed sturgeon, some fisheries incidentally catch adult sturgeon and poaching impacts all populations to an unknown degree. Incidental capture of shortnosed sturgeon also occurs in gill net fisheries in the southern portion of the shortnosed sturgeon's range. Gill net fisheries for American shad and trawl fisheries for shrimp in Georgia and South Carolina captured about 2% of a tagged sample of shortnosed sturgeon. The gill net fishery was responsible for 83% of the total shortnosed sturgeon captures. In addition, recent apprehension of poachers operating in South Carolina indicates that illegal directed take of shortnosed sturgeon in southern rivers may be a significant source of mortality (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

Migration and Movements

Movement patterns in shortnosed sturgeon vary with fish size and home river location. Juvenile shortnosed sturgeon generally move upstream in spring and summer and move back downstream in fall and winter; however, these movements usually occur in the region above the saltwater/freshwater interface. Adult shortnosed sturgeon exhibit freshwater amphidromy in some rivers in the northern part of their range but are generally estuarine anadromous in southern rivers. While this species is occasionally collected near the mouths of rivers, shortnosed sturgeon are not known to participate in coastal migrations. Spawning migrations are apparently triggered when water temperatures warm above 8°C. Consequently, spring spawning migrations occur earlier in southern systems. A shortnosed sturgeon spawning migration is characterized by rapid, directed and often extensive upstream movement. Adults tracked adults during pre-spawning upstream migrations of up to 200 km in the Savannah River. Spawning migrations are easily interrupted by capture and handling or by dams. Non-spawning movements include rapid, directed post-spawning movements to downstream feeding areas in spring and localized, wandering movements in summer and winter. Shortnosed sturgeon usually leave the spawning grounds soon after spawning. Post-spawning migrations were correlated with increasing spring water temperature and river discharge. During these movements shortnosed sturgeon apparently move singly and "home" to very specific sites. Estimated swimming speed during summer is considerably slower than during spawning migrations while shortnosed sturgeon are even less active in winter (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

Feeding

Shortnosed sturgeon are benthic omnivores but have also been observed feeding off plant surfaces. Based on the high incidence of non-food items in juvenile shortnosed sturgeon, it has been concluded that juveniles randomly vacuum the bottom while adults are more selective feeders. The presence of food in the gut during all times of day indicated that shortnosed sturgeon are continuous feeders. Shortnosed sturgeon feed on crustaceans, insect larvae, worms, and mollusks; however, they apparently undergo ontogenetic shifts in preferred foods. Insect larvae predominate in the diet of juveniles while adults feed primarily on small mollusks. In southern rivers have been described at the saltwater/freshwater interface during fall and winter in the Savannah River. During summer, shortnosed sturgeon in southern systems appear to reduce activity, fast, and lose weight (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

Factors Affecting Recovery

The USFWS identified pollution and overharvesting in commercial fisheries as reasons for initially listing shortnosed sturgeon as endangered under listing criteria set forth in the Endangered Species Conservation Act of 1969 (USDOI 1973). Many aspects of shortnosed sturgeon biology and environmental tolerances are poorly understood, presumably because the sturgeon's endangered status limits access to study animals. As a result, there is much speculation about the factors that affect recovery of shortnosed sturgeon populations yet not much conclusive evidence. However, as discussed below, we can identify various activities that, left unchecked, may contribute to the further decline and impede recovery of Shortnosed sturgeon. Through Section 7 consultations, mandated by the ESA, federal agencies are required to assess the impact(s) of federal projects on shortnosed sturgeon. Projects that may adversely affect sturgeon include dredging, pollutant or thermal discharges, bridge construction/removal, dam construction, removal and relicensing, and power plant construction and operation. As a result of Section 7 consultations, the NMFS has obtained some valuable information regarding the extent to which these projects may affect shortnosed sturgeon. In many cases, however, data are inconclusive in establishing any direct relationships between project activities and biological impacts to sturgeon populations. The following is a summary of the best available information regarding influences on sturgeon recovery throughout the species' range (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

Commercial and Recreational Fishing

Directed harvest of shortnosed sturgeon is prohibited by the ESA. Sturgeon may be most prone to capture during their spring spawning migration which coincides with the shad fishing season. In fall and winter, sturgeon congregate in deep depressions of river where there is little commercial fishing activity, although poaching probably occurs all year (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

Poaching

While the impacts of poaching to individual population segments is unknown, this threat may be significant in some rivers (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

Bridge Construction/Demolition

Bridge construction and demolition projects may interfere with normal shortnosed sturgeon migratory movements and disturb sturgeon concentration areas. Bridge demolition projects may include plans for blasting piers with powerful explosives. Unless appropriate precautions are made to mitigate the potentially harmful effects of shock wave transmission to the air-bladder connected to the gut; fish like shortnose sturgeon may suffer internal damage and/or death may result. There are no data available on the effects of blasting on sturgeon (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

Contaminants

Contaminants, including toxic metals, polychlorinated aromatic hydrocarbons (PAHs), pesticides, and polychlorinated biphenyls (PCBs) can have substantial deleterious effects on aquatic life including production of acute lesions, growth retardation, and reproductive impairment. Ultimately, toxins introduced to the water column become associated with the benthos and can be particularly harmful to benthic organisms like sturgeon. Although there have not been any studies to assess the impact of contaminants on shortnosed sturgeon, elevated levels of environmental contaminants, including chlorinated hydrocarbons, in several other fish species are associated with reproductive impairment (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

Dams

Hydroelectric dams may affect shortnosed sturgeon by restricting habitat, altering river flows or temperatures necessary for successful spawning and/or migration, and causing mortalities to fish that become entrained in turbines. In all of these rivers, shortnosed sturgeon spawning sites occur just below the dams, leaving all life stages vulnerable to perturbations of natural river conditions caused by the dam's operation. Sturgeon appear unable to use some fish ways (e.g., ladders) but have been lifted in fish lifts. An inability to move above dams and use potentially beneficial habitats may restrict population growth. Since sturgeon require adequate river flows and water temperatures for spawning, any alterations that dam operations pose on a river's natural flow pattern, including increased or reduced discharges, can be detrimental to sturgeon reproductive success. Similarly, low elevation dams in the Southeast may also restrict or limit sturgeon access to natural spawning areas. In the Savannah River shortnosed sturgeon are known to spawn downstream of the Augusta City lock and dam. A low elevation Lock apparently block upstream migration of that river's shortnosed sturgeon population (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

Dissolved Oxygen

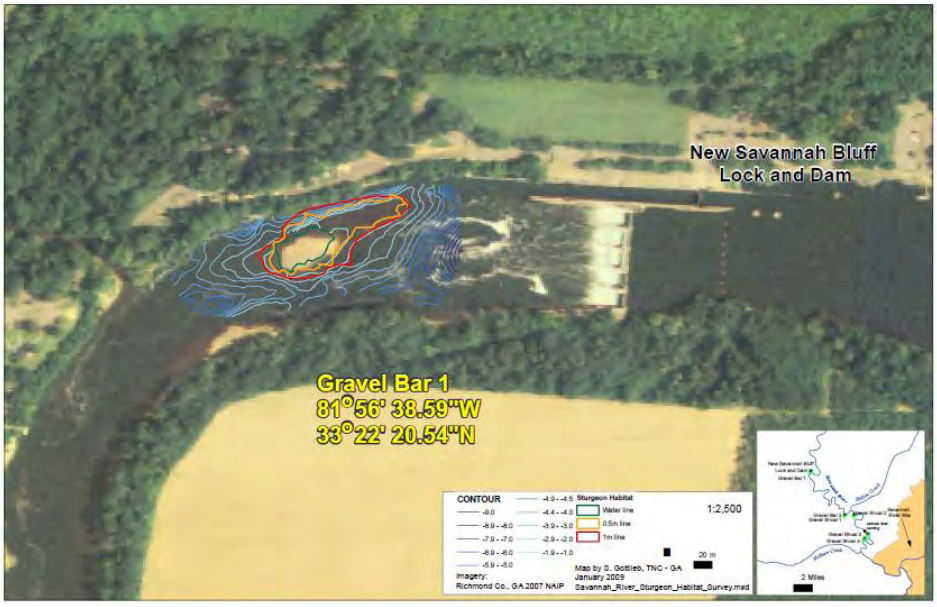
Pulp mill, silvicultural, agricultural, and sewer discharges, which contain elevated temperatures or high biological demand, can reduce dissolved oxygen levels. In addition, reduced water flows resulting from power plant shut downs can produce anoxic conditions downstream. These may occur at Cooling Water Intakes. Low oxygen levels are known to be stressful to aquatic life, and presumably, sturgeon would be adversely affected by levels below this limit. Shortnosed sturgeon may be less tolerant of low dissolved oxygen levels in high ambient water temperatures and show signs of stress in water temperatures higher than 28oC. At these temperatures, concomitant low levels of dissolved oxygen may be lethal. In Georgia, several rivers exhibit low oxygen levels at the saltwater/freshwater interface, an area that normally aggregates both juveniles and adults (Final Recovery Plan, Shortnosed Sturgeon Dec., 1998).

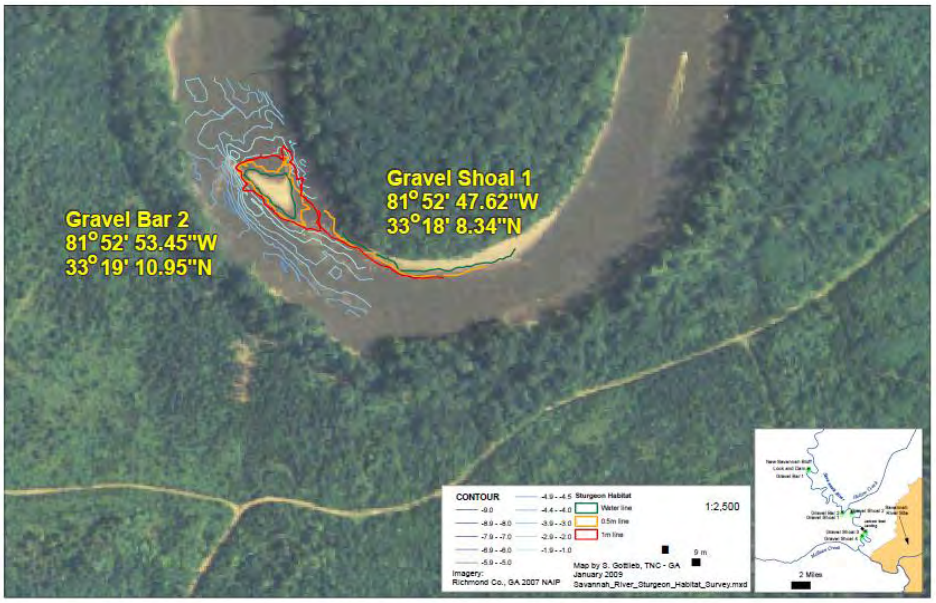
Military Training Restriction on the Savannah River

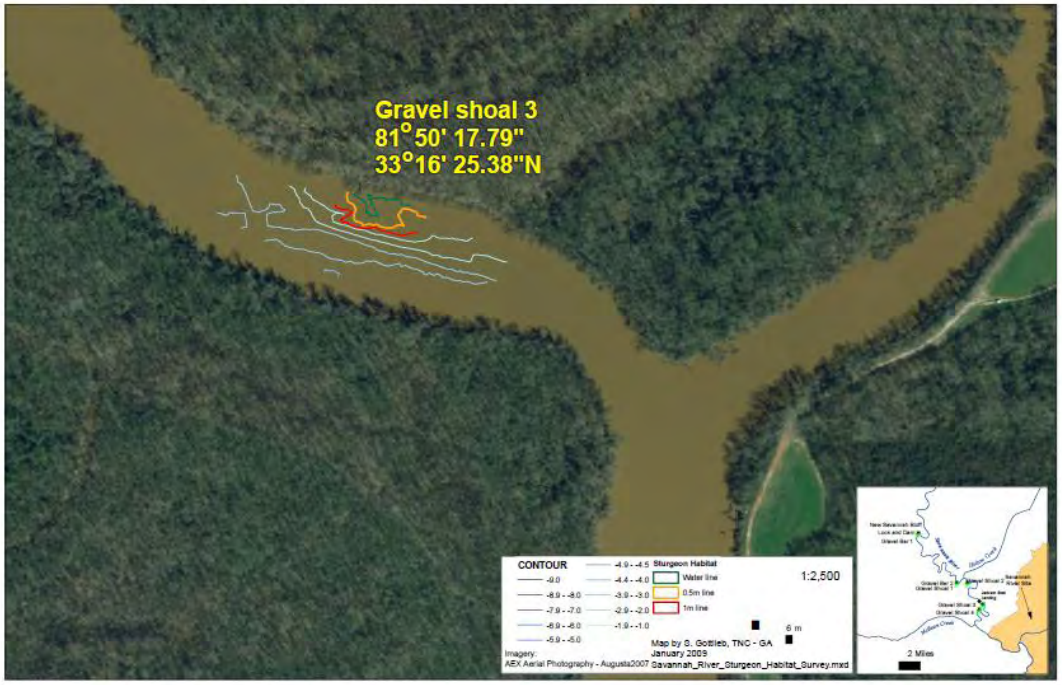
Army training activities are restricted from the Savannah River during spawning season, February through April. Underwater training is authorized; however, underwater pyrotechnics that detonate underwater to simulate combat activities are prohibited subsurface. Blank weapons fire and pyrotechnics are authorized on the surface of the water. Every effort will be made to contain expended ammunition residue such as brass, links, and other particulate matter inside boats and aircraft. Training units will not release chemicals into the environment, such as fuel, oil, human waste, or cleaning solvents. Trash will be collected and disposed of properly (U.S. Army / DOE JSOP).

Shortnosed Sturgeon Training and Education for Army Training activities on SRS

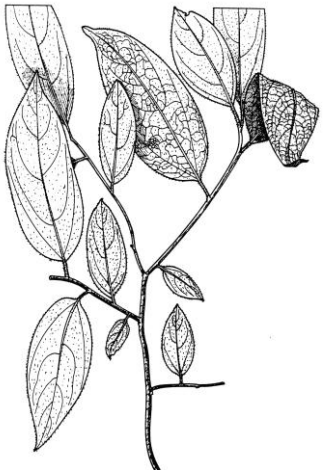
All soldiers participating in training on the Savannah River will be instructed on presence of the Shortnosed Sturgeon as a TES in the Savannah River, provided photographs for visual identification, issued precautions, and training limitations explained for waterborne training activities on the river. A brochure will be developed for all TES found on SRS. This brochure will be issued to all soldiers prior to commencement of any training activities (U.S. Army / DOE JSOP).

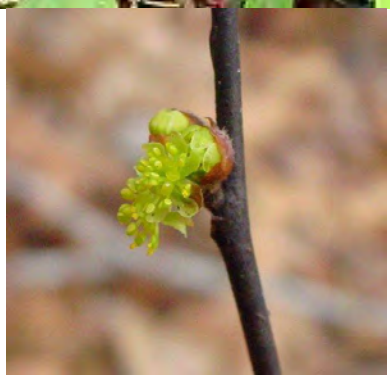

New Savannah Bluff
Lock and Dam
Gravel Bar 1
81°56' 38.59"W
33°22' 20.54"N
CONTOUR
Sturgeon Habitat
Water line
0.5m line
1m line
1:2,500
20 m
Map by S. Gottlieb, TNC - GA
January 2009
Savannah_River_Sturgeon_Habitat_Survey.mxd
Imagery:
Richmond Co., GA 2007 NAIP
2 Miles


Gravel Shoal 1
81°52' 47.62"W
33°18' 8.34"N
Gravel Bar 2
81°52' 53.45"W
33°19' 10.95"N
CONTOUR
Sturgeon Habitat
Water line
0.5m line
1m line
1:2,500
9 m
Map by S. Gottlieb, TNC - GA
January 2009
Savannah_River_Sturgeon_Habitat_Survey.mxd
Imagery:
Richmond Co., GA 2007 NAIP
2 Miles


Gravel shoal 3
81°50' 17.79"
33°16' 25.38"N
CONTOUR
-9.0
-8.9 - -8.0
-7.9 - -7.0
-6.9 - -6.0
-5.9 - -5.0
-4.9 - -4.5
-4.4 - -4.0
-3.9 - -3.0
-2.9 - -2.0
-1.9 - -1.0
Sturgeon Habitat
Water line
0.5m line
1m line
1:2,500
6 m
Map by S. Gottlieb, TNC - GA
January 2009
Imagery:
AEX Aerial Photography - Augusta2007
Savannah_River_Sturgeon_Habitat_Survey.mxd
2 Miles

Pondberry (Southern Spicebush) (*Lindera melissifolia*)





Pondberry on SRS

A single pondberry population is found within the Supplemental RCW Management Area. Mechanical midstory removal and prescribed fire would reduce competition around the population and provide additional benefits through increased plant vigor (B.E. RCW Management Plan, Ray 2009).

Pondberry is typically associated with wetland habitats. Pondberry was recently discovered at a Carolina bay on SRS. On SRS, this species is monitored and actions to protect it are being implemented. Populations of other sensitive plant species are being identified through field surveys. (DOE NRMP, May 2005) Pondberry is an aromatic, deciduous shrub with erect stems and shoots, growing as high as 6.5 ft (2 m). It spreads vegetatively by above ground shoots (stolons). Young stems and leaves are hairy. Leaves are alternate, drooping, and oblong, with hairy edges, a pointed tip and rounded base, 2-4 inches (5-10 cm) long and 0.6-1.4 inches (1.5-3.5 cm) wide. Small, pale, clustered flowers appear before leaves from February to April. Common spicebush *(Lindera benzoin)* is taller, 6.5-16.4 ft (2-5 m) with leaves that do not droop, are tapered at the base, and smell like benzene when crushed. Pond spice (*Litsea aestivalis)* is taller with shorter, leathery leaves. Pondberry is characterized by the sassafras-like odor of its crushed leaves and tendency to form thickets of clonal, unbranched stems (100-10,000) (Recovery Plan, Sept., 1993).

Life History

Flowers appear from February through April before leaf and shoot growth begins in late April. Fruiting occurs from August to September. The fruit matures in late autumn and is fleshy, oval, bright red, about 0.25-0.50 inch (6-10 mm) in diameter, but appears to have no reproductive value. Flowers are unisex and plants are mostly dioecious (Pondberry Recovery Plan, Sept., 1993).

Habitat

Bottomland hardwood forests in inland areas, poorly drained swampy depressions, and edges of limestone sinks and ponds closer to the coast. Occurs at the edges of swamps and ponds and depressions in forests of longleaf pine and pond pine forests. Typically found in somewhat shaded areas, but can also grow in full sun (Pondberry Recovery Plan, Sept., 1993).

Threats

Endangered by degradation and destruction of plants and habitat by land clearing and drainage operations, timber harvesting and other forest management practices that eliminate forest canopy and change hydrology of the soil, encroachment by competitor species, and fungal disease that causes the plant to wilt (Pondberry Recovery Plan, Sept., 1993).

Actions to protect the Pondberry by the Army

The Army may in train adjacent to wetlands, which are prime habitats of Pondberry. (U.S. Army / DOE JSOP) (Draft EA, 2010) Most rare plant locations on SRS are marked using yellow chain that surrounds the rare plant plots. These locations will be identified to all soldiers during the SRS Site Orientation Briefing. Photos of a Pondberry plant, which will also be shown to soldiers during the briefing. A brochure will be issued to all soldiers that identify all federally endangered species on SRS, and which specifically identify Pondberry locations. Foot traffic will not come within 50 meters of marked Pondberry locations. Wheeled vehicles may travel on existing roads that traverse through Pondberry habitat.

Because there is a single Pondberry population, FGRC can easily plan training activities away from these protected locations. FGRC will conduct daily inspections of Pondberry habitat should training activities inadvertently come within 100 meters of a protected Pondberry location. FGRC will verify through USFS-SR, that specific locations have not been affected by either Army or other SRS tenant organizations. At least 3 days prior to any training activity, FGRC will inspect Pondberry locations for existing habitat damage if the training activity is in the same timber compartment of a known Pondberry population (U.S. Army / DOE JSOP).

Ruts and other disturbance of top soil caused by military vehicles will be repaired to reduce the possibility of drainage and erosion. This should reduce the potential of drainage into wetlands that may contain an undocumented Pondberry population (U.S. Army / DOE JSOP).

Smooth Purple Coneflower (*Echinacea laevigata*)

The Smooth Purple Coneflower on SRS

The USFWS designated smooth purple coneflower as endangered in 1992 and provided a recovery plan in 1995. The smooth purple coneflower is a short-lived, rhizomatous perennial that can flower in its first season following germination if optimum growth conditions exist. Seeds germinate during the early spring and rapidly grow to maturity. Growth and survival of seedlings is primarily dependent upon soil moisture conditions and root competition. With continued survival and growth, new shoots along a common perennial rhizome arise through hormonal stimulation at lateral bud points. Factors that stimulate growth along the perennial rhizome are not known for the smooth purple coneflower.

In some plants, direct light, mechanical damage, increased nitrogen levels, and raised temperature conditions can stimulate rhizomatous shoot growth. Like most disturbance-mediated species, smooth purple coneflower flowering effort is greater in well-lit areas. Flowering begins in late May to mid June and seeds are mature by early to late October. Seeds are eaten by a wide variety of granivorous bird and small mammal species associated with temperate meadows and woodlands. Caching or mishandling by granivores represents a small percentage of the seed dispersal. Most seed not eaten are gravitationally dispersed away from the flower stalk. Like most perennial members of the Asteraceae, seed may persist for several years in the seed bank. Smooth purple coneflower individuals persist under heavily shaded conditions as persistent rhizomes. Disturbance related silvicultural practices increase flowering effort and overall vigor. Forest thinning and litter removal may stimulate growth after long periods of persistence under less than optimum conditions. Three populations of smooth purple coneflower are known to occur at SRS and a fourth population is now considered extirpated (B.E. for RCW, Ray 2009).

This plant is 1.5-3.5ft (50-100cm) tall and arises from a thick fleshy root. The basal leaves are much longer than wide, coarsely toothed, smooth above and beneath, 3-5in (8-13cm) long, 1-3in (3-8cm) wide, and are attached by long slender petioles. The stem leaves are alternate, similar in shape to the basal leaves but smaller, and with shorter petioles. The single flower head is terminal and has 2 kinds of small flowers, ray and disk. The 1 petal of each ray flower is deep to pale pink, toothed at the tip, 2-3in (5-8cm) long, and drooping. The disk flowers are purple and about 0.3in (1cm) long. The fruit is an achene (nutlet). Pollinators are speculated to be butterflies and bees. Seed dispersal is accomplished through seed-eating birds and small mammals (USACE- Construction Engineering Laboratory).

Threats

Its plight has diverse causes. Most populations have been affected by habitat loss due to agriculture or development. Mowing of highway rights-of-way threatens populations unless they are protected. Fire suppression has allowed encroachment of competing plants, which the smooth coneflower cannot tolerate (USACE- Construction Engineering Laboratory).

Actions to protect the Smooth Purple Coneflower by the Army

The smooth purple coneflower will be briefed as a federally protected plant and a photo shown to all soldiers during the Unit Orientation Briefing. Most rare plant locations are marked using yellow chain, which surrounds the plot. Foot traffic will not come within 100 meters of known smooth purple coneflower locations. A known Smooth Purple Coneflower population lies between Sandbox Road and Road 9. Sandbox Road will be restricted to travel by Army Convoys (U.S. Army / DOE JSOP). Absolutely no training of any type will be allowed on smooth purple coneflower growth. Because there are only a few coneflower locations, FGRC will plan training ground activities well away from these protected locations. On a daily basis, FGRC will spot check coneflower habitat should training activities inadvertently come within 100 meters of their location. FGRC will verify through USFS-SR, that specific locations have not been affected by either Army. At least 3 days prior to any training activity, FGRC will inspect coneflower locations for damage if the training activity is in the same timber compartment of known coneflower (U.S. Army / DOE JSOP).

American Alligator (*Alligator mississippiensis*)



Description and Habitat

American alligators *(Alligator mississippiensis)* inhabit the southeastern United States. Once a federally listed endangered species, American alligators have recovered in many areas. The species is still federally listed as threatened because it looks like the endangered American crocodile, and the ranges of the 2 species overlap. (Department of the Interior, Fish and Wildlife Service 50 CFR Part 17, The species belongs to the order Crocodylia and the family Alligatoridae. Alligators live in swampy areas, rivers, streams, lakes and ponds. On the Savannah River Site, alligators inhabit the Savannah River, its swamp and tributaries, Par Pond, L-Lake and other reservoirs on the site (SREL, Herp. Prog., Brochure. Alligators).

The American alligator is the largest reptile in North America. It has a large, dark (usually black), slightly rounded body and thick limbs. Unlike the crocodile, the alligator has a broad head. The alligator uses its powerful tail to propel itself through water. The tail accounts for half the alligator's length. While alligators move very quickly in water, they are generally slow-moving on land. They can, however, move quickly for short distances (Fact Sheet, Smithsonian National Zoological Park).

Legal Status/Protection

First listed as an endangered species in 1967, the American alligator was removed from the endangered species list in 1987 when the Fish and Wildlife Service pronounced the American alligator fully recovered. They are classified as a threatened species under the ESA because of their similarity in appearance to the American crocodile, an endangered species. (Department of the Interior, Fish and Wildlife Service 50 CFR Part 17, South Florida is the only place in which the crocodile and the alligator occur together. American crocodiles are found only at the tip of southern Florida (Recovery Plan for South Florida).

Behavior and Habitat

Alligators live in freshwater environments, such as ponds, marshes, wetlands, rivers, and swamps, as well as brackish environments. Large male alligators are solitary, territorial animals. The largest males and females will defend prime territory. Smaller alligators can often be found in large numbers in close proximity to each other, because smaller alligators have a higher tolerance of other alligators within a similar size class. During breeding season, the female builds a nest of vegetation, sticks, leaves, and mud in a sheltered spot in or near the water (American Alligator Fact Sheet, Defenders of the Wildlife, Fact Sheet).

Mating Season Mid-April through May

Gestation 60-65 day egg incubation

Clutch size 35 – 50 eggs. Some females lay up to 90 eggs. Eggs generally hatch in mid-August. Sex is fully determined at the time of hatching and irreversible thereafter, and depends on the temperature of

egg incubation, temperatures of 86°F producing females, of 93°F yielding only males (Fact Sheet, Smithsonian National Zoological Park).

Alligator Research at SREL

The University of Georgia's Savannah River Ecology Laboratory (SREL) began conducting ecological studies on the newly created Savannah River Site (SRS) on the upper Coastal Plain of South Carolina in 1951. Studies of the American alligator on the SRS have increased our knowledge about its basic ecology and provided insights on the effects of industrial facilities on alligators. SREL's ongoing research, in collaboration with researchers from around the world, continues to lead to new discoveries about alligators and other crocodilians (SREL, Herp. Prog., Brochure. Alligators).

Threats

Once hunted for their hides, alligators today are threatened mainly by habitat loss and encounters with people. They are hunted for their skin (for leather goods) and for their meat. Before hunting was controlled in 1970, an estimated 10 million alligators were killed for their skins. As sea level rises due to climate change, a significant portion of alligators' freshwater and brackish marsh habitat may face an incursion or inundation of saltwater. Like many reptiles, the sex of baby alligators is determined by the temperature at which the eggs incubate; higher temperatures due to climate change will produce a higher ratio of males, altering the male-female sex ratios (American Alligator Fact Sheet).

Actions to protect the Alligator by the Army

The alligator's primary habitat is wetlands, river areas, swamps, and lake. All military units training on SRS are strictly forbidden from molesting or disturbing any alligators. The Army will conduct limited training on SRS lakes and the Savannah River. All training will be approved through the 90 /60 / and 30 day approval process. The Army may train adjacent to wetlands on SRS but will not enter wetlands which may provide pools, small ponds, and Carolina bays for Alligators to live. Army waterborne operations are limited to approximately 11 miles of the Savannah River and shores near D-Area. This area includes D- Area, and 681-1G Pump House, otherwise known as 1G Pump House. Large Alligators are known to sun themselves directly below the dam and retaining wall near 1G Pump House. Military personnel are allowed to train on 1G Pump House as long as Alligators are not harassed. Tactical training as previously discussed, should not directly impact Alligator habitat due to the limited waterborne training locations. Soldiers will be made aware of Alligator presence in and near the Savannah River during the Unit Orientation Unit briefing prior to the commencement of any training activity (U.S. Army / DOE JSOP).

Bald Eagle (*Haliaeetus leucocephalus*)

Bald Eagle TMZ

Protective Legislation

Three federal laws provide protection for the bald eagle; the Endangered Species Act, the Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act of 1918. The U.S. Fish and Wildlife Service Pacific Bald Eagle Recovery Plan (1986) includes recommendations for managing habitat and human disturbance. The U.S. Fish and Wildlife Service (USFWS) approved management plan for the bald eagle provides protection of the immediate area surrounding each nesting territory.

The bald eagle *(Haliaeetus leucocephalus)*, our national bird, is the only eagle unique to North America. The bald eagle's scientific name signifies a sea *(halo)* eagle *(aeetos)* with a white *(leukos)* head. The bald eagle is a sea or fish eagle. The "southern" bald eagle, *Haliaeetus leucocephalus s,* is found in the Gulf States from Texas and Baja California across to South Carolina and Florida, south of 40 degrees north latitude.

Bald eagles were officially declared an endangered species in 1967 in all areas of the United States south of the 40th parallel, under a law that preceded the Endangered Species Act of 1973.

Until 1995, the bald eagle had been listed as endangered under the Endangered Species Act in 43 of the 48 lower states.

In July of 1995, the US Fish and Wildlife Service upgraded the status of bald eagles in the lower 48 states to "threatened."

On June 28, 2007 the Interior Department took the American bald eagle off the Endangered Species List. The bald eagle will still be protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

The Bald Eagle Protection Act prohibits the take, transport, sale, barter, trade, import and export, and possession of eagles, making it illegal for anyone to collect eagles and eagle parts, nests, or eggs without a permit.

Under the Migratory Bird Treaty Act, it is illegal to pursue, hunt, take, capture, kill, possess, sell, barter, purchase, export, or import migratory birds, their parts, nests or eggs, except as permitted by regulation. “Take” is defined under the Migratory Bird Treaty Act as “pursue, hunt, shoot, wound, kill, trap, capture, possess, or collect.”

On SRS, a recent reduction in nest productivity coincided with an incidence of avian vacuolar myelinopathy (AVM). AVM is a debilitating and often fatal disease found in American coots and other

water birds that are primary prey species of bald eagles at SRS. AVM has been confirmed in the death of two eagles at SRS, and is suspected to have killed more (DOE, NRMP, May 2005).

Bald Eagle Description

Distinguished by a white head and white tail feathers, bald eagles are powerful, brown birds that may weigh 14 pounds and have a wingspan of 8 feet. Male eagles are smaller, weighing as much as 10 pounds and have a wingspan of 6 feet. Sometimes confused with golden eagles, bald eagles are mostly dark brown until they are four to five years old and acquire their characteristic coloring. There is a distinction between the two species, though, even during the early years. Only t he tops of the bald eagle's legs have feathers. The legs of golden eagles are feathered all the way down (USFWS Bald Eagle Fact Sheet, Rev. 2007).

Bald Eagle Habitat

The Bald eagle is one such bird that is quite affected by human activities. This large and magnificent bird prefers habitat close to seacoast or even other water bodies such as lakes. (USFWS Bald Eagle Fact Sheet, Rev. 2007) One of the Bald Eagle nest is located adjacent to L-Lake. The Bald eagle love to be in areas that have an abundance of fish. It is also generally spotted in areas that are free from human interference (SRS Ecological - Military Planning Map).

The Bald eagle is often seen in areas of North America. It prefers deciduous forest. This bird selects hardwood trees for roosting and nesting. During the breeding season, the Bald eagle shifts its location towards south from the northern areas of Canada or Alaska. This is in search of fish for food and this move usually occurs by late October (USFWS Bald Eagle Fact Sheet, Rev. 2007).

The Bald eagle particular chooses its habitat in relation to the nests it wishes to build. These birds build large nests, which have a depth of about 2 feet and a width of about 5 feet. It lines the nests with a variety of things such as twigs, grass, moss etc., (USFWS Bald Eagle Fact Sheet, Rev. 2007).

Threats

The main threat to Bald Eagles was the pesticide DDT. This widely used pesticide was slow to decay and moved up the food chain, becoming more and more dangerous to many birds as it became more concentrated. As Bald Eagles consumed contaminated fish, their egg shells were weakened, eventually decreasing populations to a dangerously low level. Another way Bald Eagles and other eagles die is by electrocution. Main places eagles travel to are electric power plants. Sometimes they get too close to the power lines and get shocked. (The dams at the power plants keep the river waters open, and the eagles go there to fish.) A third way eagles die is by poachers (USFWS Bald Eagle Fact Sheet, Rev. 2007).

Proposed actions to protect the Bald Eagle by the Army

There are two Bald Eagles in the Territorial Management Zones (TMZ) on SRS. One TMZ is in the restricted area and therefore does not impact Army training. The USFS-SR has imposed a 2,000 meter, or roughly 6561.68 foot buffer around each TMZ. There is a no access restriction on the Bald Eagle TMZ from Oct., 1st through May 31st (SRS Ecological - Military Planning Map).

The Army will restrict all training activities inside the Bald Eagle TMZ other than convoy activity on Road B. Road B is an access road which travels through SRS, allowing employees access to various work facilities. Military vehicles may travel by vehicle convoy Road B, or by foot on the sides of Road B to access authorized training lands. Foot traffic is authorized to transit through the Eagle TMZ to other training areas located outside the Eagle TMZ.

Military aircraft should avoid flying over the Eagle TMZ. Specific air corridors have been implemented to allow military aircraft access to SRS and away from Eagle TMZ areas. If military aircraft must fly over an Eagle TMZ, aircraft must maintain a minimum altitude of 1000 feet above eagle TMZ areas.

A brochure will be issued to all soldiers which identify all endangered species on SRS, and specifically identify known Eagle TMZ locations. All soldiers will be shown photographs and receive a briefing on the bald eagle during the unit orientation briefing prior to commencement of any training activities (U.S. Army / DOE JSOP).

The Wood Stork *(Mycteria Aamericana)* on SRS

Adult Wood Storks with young in the nest (Birdsville–GA DNR).

The wood stork is 1 of 19 species in the family Ciconiidae and 1 of 4 species in the genus *Mycteria*. Wood storks are morphologically indistinguishable across the species' range and no subspecies have been proposed. Wood storks are the only stork species and the largest wading bird that breeds in the United States. They are large, long-legged birds with a head to tail length of 85 to 115 cm (33 to 45 inches) and a wingspan of 150 to 165 cm (59 to 65 inches). Adults are white except for their primary and secondary wing and tail feathers, which are black with a greenish sheen. Adults have an unfeathered head and neck with a long, thick black bill. The legs and feet are dark; toes are pink during the breeding season. Sub-adults are similar except the head and neck have grayish feathers that are gradually lost as the bird matures. Sub-adults also have a pale yellow bill.

Wood storks were listed as endangered on February 28, 1984, pursuant to the Endangered Species Act of 1973, as amended (U.S. Fish and Wildlife Service 1984). They are also listed as endangered under the South Carolina Nongame and Endangered Species Conservation Act. The South Carolina Heritage Trust Program lists the wood stork as threatened in this state.

The United States breeding population of wood storks was listed as endangered after nesting pairs declined from between 15,000 and 20,000 in the 1930's to 2,500 pairs by 1978. The low number in 1978 was a combination of a decrease in the regional population and poor conditions for nesting that particular year (U.S. Fish and Wildlife Service 1996). Historically, wood storks have used South Carolina as a post-nesting foraging area during the summer and fall. In 1981, the first successful wood stork nests were documented in South Carolina (11 nests). By 2004, the population had grown to 2,057 nests at 14 sites (Wood Stork Taxonomy and Basic Description, Murphy).

Wood Storks nesting in Georgia, Florida, and South Carolina move south for the winter. Wood storks have been seen in South Carolina every month of the year. However, Storks nesting from central Florida to South Carolina usually start in late winter (February-March) and finish in July-August. Wood storks use a variety of freshwater and estuarine wetlands for nesting, feeding, and roosting sites. Each habitat type has distinct characteristics.

HABITAT AND NATURAL COMMUNITY REQUIREMENTS

Currently, Wood storks have not been found nesting on SRS. However, Wood Storks have been known to forage on SRS swamps. (DOE, NRMP, May 2005) Wood storks typically nest in the upper branches of black gum (*Nyssa biflora*) or bald cypress (*Taxodium distichum*) trees over standing water. Standing water deters mammalian predators and is an essential element of colony sites. Storks require open access to nest trees and are frequently found in trees adjacent to open water areas. Range-wide, there has been a trend towards the use of manmade wetlands as colony sites in recent years as these sites are not totally dependent on rainfall for water. In South Carolina, colony sites are surrounded by extensive wetlands, in particular palustrine forested wetlands. Typically, storks select patches of medium to tall trees as nesting sites, which are located either in standing water (swamps) or on islands surrounded by relatively broad expanses of open water. Development, lowered water tables and disturbance degrade nesting sites. Therefore, as their natural range has become depleted, South Carolina has become an important population source in recent years (Wood Stork Taxonomy and Basic Description, Murphy).

Foraging

Storks forage in a wide variety of shallow wetlands, whenever prey concentrations reach high enough densities, in water that is shallow and open enough for the birds to be successful in their hunting efforts. Good feeding conditions usually occur in relatively calm waters, where depths are between 5-40 cm (2-16 inches), and where the water column is uncluttered by dense patches of aquatic vegetation. Typical foraging sites throughout the species' range include freshwater marshes and stock ponds, shallow, seasonally flooded roadside or agricultural ditches, narrow tidal creeks or shallow tidal pools, managed impoundments and depressions in cypress heads and swamp sloughs. Difference between seasons and years in rainfall and surface water patterns often cause storks to make changes between years in where and when certain habitats are used for nesting, feeding or roosting. (Recovery Plan, 1997) At the height of industrial activity at SRS, Steel Creek and Steel Creek Delta, Four Mile Branch, and Beaver Dam Creek were prime forage location for Wood Storks because reactor cooling water from various sites fed these creeks in order to maintain this vital foraging area. Once these reactors were brought off-line, water eventually dried up, thus valuable Wood Stork forage locations were reduced (Coulter, 1993).

Known Colonies and Foraging Sites

The Birdsville Colony was discovered in 1980, near Millen, Georgia. This location is an excellent breeding location. The storks first return to the area in late February or early March and begin arriving in the colony from early through late March. They lay eggs from late March through late May; after a 30-day incubation period the chicks hatch from late April through late June. The chicks remain in the colony for two to three months and begin dispersing from late June through early September, but in most years the birds have largely left the colony by late July or early August. The Birdsville Colony is within 45 km of the SRSS. Storks have been followed from the colony to the SRSS where they were observed foraging; lt was thought that the SRSS may be an important foraging area for storks from the colony, lt was necessary to understand the size of the colony and the amount of food needed by the colony, as well as the timing of this need. lt was also important to understand the importance of food limitation (and so the possible importance of the SRSS) in affecting the reproductive success of the colony.

When the DOE decided to restart L-Reactor on the Savannah River Site (SRS) in the 1980s, there was concern that when the reactor was restarted, cooling water flowing into the Steel Creek Delta would raise the water level and the area would become too deep for foraging storks. The potential loss of this area to storks was important because storks had been observed foraging in the Steel Creek Delta. The USDOE began consultation with the USFWS in April, 1984, and the USDOE subsequently agreed to develop and

maintain alternative foraging habitat to replace the potential loss. Among alternate sites considered, Kathwood Lake on the National Audubon Society's (NAS) Silver Bluff Plantation Sanctuary was chosen. This location is near Jackson, South Carolina. Storks had been observed feeding at the lake in previous years and Kathwood Lake is within 45 km (28 miles) of the Birdsville Colony, the same distance as the Savannah River Swamp System (SRSS) is from the colony. A technical working group was formed with representatives of USDOE, USFWS, E. I. DuPont de Nemours and Company (and later the Westinghouse Savannah River Company), the NAS and the SREL to make suggestions on the design of the ponds and to review their effectiveness. It was decided to alter the lake, and to develop 4 ponds in its place. SREL took responsibility for gathering necessary biological information for the development of the Kathwood ponds, Jackson, South Carolina., and for subsequent management of the ponds. In order to design and manage the alternate foraging ponds as effectively as possible, it was necessary to understand aspects of the biology of the storks, the characteristics of their foraging sites Meyers directed this program (Coulter, 1993).

Feeding Behavior

The specialized feeding behavior of the wood stork involves tactilocation, also called grope feeding. A feeding stork wades through the water with the beak immersed and partially open. Tactilocation allows storks to feed at night or utilize water that is turbid or densely vegetated. Forested riverine floodplain habitats are frequently used, but a variety of ponds, ditches and diked marsh impoundments are important habitats. Use of these habitats is enhanced by receding water. Storks also forage around low tide along many coastal tidal creeks (Recovery Plan, 1996).

Roosting

Although storks tend to roost at sites that are structurally similar to nesting sites, they also use a wider variety of sites for roosting than for nesting. Non-breeding storks, for example, may change roosting sites in response to changing feeding locations, and in the process, will roost in patches of trees that would be unacceptable for nesting; (i.e. stands of tress over dry ground). Roosts may be used for long periods of time, either seasonally or annually over many years, or may be used for only brief periods, depending on the availability of persistent foraging areas in surrounding wetlands. Roosting sites include cypress heads and swamps, pine or hardwood islands in marshes, mangrove islands, expansive willow thickets or dry marshes, or on the ground on levees (Recovery Plan, 1996).

Breeding

Breeding Wood storks are seasonally monogamous, probably forming a new pair bond every season. It is believed that once storks reach maturity they nest on a yearly basis. (Recovery Plan, 1996)Mating occurs after a period of a highly ritualized courtship displays at the nest site. Wood storks in Georgia and South Carolina lay eggs in March to late May, with fledgling occurring in July and August. The SRSS was used as a foraging area by storks breeding nearby as well as storks dispersing after the breeding season from nearby and more distant colonies. The Birdsville Colony near Millen, Jenkins County, GA, is the only colony from which storks were likely to visit the SRSS during the breeding season. We studied the breeding of storks at this colony to determine the timing of breeding, the amount of food demand of these birds and the importance of foraging in affecting reproductive success. By comparing the numbers of birds dispersing from this colony and the timing of dispersal, with the numbers of storks in the SRSS and later at the Kathwood ponds, we could develop an understanding of the influx of storks dispersing after the breeding season (Coulter, 1993).

Reason for Listing

Other than man intruding on nest locations, extreme weather and predation appear to be the leading cause in the decline of eggs and fledglings in breeding location.

Some of the factors for listing wood stork as an endangered species in 1984, contributed to the decline of the population. One reason is the loss of feeding habitat as the reduction in small fish due to loss of

wetland habitat (drainage) or changes in hydroperiods. Wetlands drainage and hydroperiod alterations are believed to have lowered the productivity and availability of fish for the wood stork, as well as other wading bird species. Another reason for the decline in wood stork population is water level manipulation by man. This causes a gradual drying a prey habitat resulting in nest abandonment. Additionally, as water levels drop, predation increases of wood stork nests primarily by raccoons. Extreme drying of wood stork habitat results in loss of vegetation, which results in the loss of roost and nest locations. Growing human population expands taking up species habitats and requires huge water supplies to cover their needs. Introduction of water controlling techniques has changed the cycle of wetlands and interfered with the species' feeding pattern. Thus, artificially managed hydrological regimes resulted in long droughts and rain periods, which have caused Wood Storks to experience a reproduction failure. It is believed that destruction of habitat that supplies the species with necessary food is one of the basic threats. These birds need a great deal of food to feed their progeny during the nesting season. It is estimated that a wood stork family needs over four hundred pounds of food during a breeding season. At the same time, the portion of wetlands in southern Florida has been decreased enormously in the last decade. Therefore, wetlands and other habitats should be protected from further destruction. Water management plans should be created taking into account the effects for the wood stork population. Producing a mosaic of sites characterized by a low and a high water level is also a necessary condition for maintaining the species. Conservation efforts should also include further investigation of habitats suitable for wood storks and factors favorable for the population growth (Recovery Plan, 1996).

Recovery Plan

The long-term survival and recovery of the wood stork population requires that the mosaic of nesting, foraging, and roosting habitats necessary to support storks throughout their range during varying climatological and seasonal conditions must be indentified and protected. (Recovery Plan, 1996) Though SRS does not currently have nests of wood stork on SRS, merely preserving wetland acreage does not necessarily preserve the processes necessary for the production of a strong prey base for wading birds. (Coulter, 1993)The Army supports the management of wetlands to maintain or recover the dynamic wetland processes that create and make available the abundance of required for nesting birds. Therefore, Army training activities on SRS are restricted from swamp and prime foraging areas. In addition, Army training activities are not allowed within 200 feet of wetlands, swamps, lakes, and streams. The Savannah River is exempt from this training restriction.

Conservation Accomplishments

Most importantly, standardized surveys of nesting effort have been completed for the southeastern United States. In addition, a regional wood stork working group has been organized to facilitate information exchange and to set research and management priorities. Regional management guidelines for wood stork nesting, feeding and roosting habitats have been developed. A wood stork recovery plan has been completed by the USFWS and an information brochure to inform landowners of conservation and management needs of storks has been completed as a joint production of the USFWS the SREL. A general information pamphlet for distribution to the public has also been completed by Clemson University, Department of Pesticide Regulation. Techniques for management of fresh water ponds to enhance stork use have been developed and implemented at the NAS's Silver Bluff Plantation Sanctuary in Jackson, South Carolina. Finally, artificial nesting platforms have been developed to enhance stork nesting at colony sites with limited vegetation for nest construction. This technique was developed by USFWS-Refuges Division (Wood Stork Taxonomy and Basic Description, Murphy).

U.S. Army Protective Actions for the Wood Stork on SRS

At SRS, the Army has no desire to train in wood stork habitat such as swamps, shallow ponds, and locations of standing water. Except for the Savannah River, the Army will may train adjacent to wetlands, lakes, large streams or swamps. For those aviation units flying over the swamp and lake areas of SRS, all pilots and crew members will be briefed on the possible presence of wood stork in the swamp areas. Military aircraft routes will be planned and diverted away from known wood stork nests or forage sites during 60 and 30 day planning period. The FGRC–TFC will coordinate with the USFS-SR before each training event to receive an update on wood stork on SRS. An additional 500 foot buffer will be placed

around each site to protect the wood stork. The FGRC-TFC will consult with the USFS-SR prior to any training activity to determine if wood storks are present on SRS. Training events will be modified accordingly to facilitate and protect known wood stork nest, roost, and feeding locations. Pilots will be advised to report known wood stork locations to the FGRC-TFC immediately. This information will be forwarded to the USFS-SR by the FGRC-TFC. Military water craft, scuba operations, and similar activities on the Savannah River may transit past the wood stork location in order to move to and from the training site. A brochure will be issued to all soldiers with photos of the wood stork. All soldiers will be shown photographs and receive a briefing on the wood stork during the unit orientation briefing prior to commencement of any training activities (U.S./ DOE Army JSOP) (EA).

Effects Determination

This section addresses the impacts of the proposed Army training activities on SRS. This evaluation is based on the best available scientific information concerning the status of the species as it relates directly with proposed Army training activities as well as the best available scientific information concerning the biology and ecology of the species in question.

The following determination definitions are taken from "Endangered Species Consultation Handbook" (USFWS 1998).

No effect - the appropriate conclusion when the action agency determines its proposed action will not affect listed species or critical habitat.

May affect, not likely to adversely affect - the appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial.

Beneficial effects are contemporaneous positive effects without any adverse effects to the species.

Insignificant effects relate to the size of the impact and should never reach the scale where take occurs.

Discountable effects are those extremely unlikely to occur. Based on best judgment, a person would not: (1) be able to meaningfully measure, detect, or evaluate insignificant effects; or (2) expect discountable effects to occur.

May affect, likely to adversely affect - the appropriate conclusion if any adverse effect to listed species may occur as a direct or indirect result of the proposed action or it's interrelated or interdependent actions, and the effect is not: discountable, insignificant, or beneficial (see definition of "is not likely to adversely affect"). Based on the information contained, herein, the proposed action of Army training on the Savannah River Site will result in the following determinations to federally protected species.

Smooth purple coneflower

Smooth purple coneflower will be protected from ground disturbing training activities as specified in this BE. The Army encourages disturbance related silviculture activities such as thinning and prescribed burning that will promote growth. Therefore, Army training activities will have ***no effect*** due to ***insignificant and discountable effects***.

Pondberry

One single Pondberry population is located next to a Carolina Bay. The Army encourages mechanical midstory removal and prescribed fire which would reduce competition around the population and provide additional benefits through increased plant vigor. Not sure thinning activities should be recommended for wetland habitats. Pondberry will be protected from ground disturbing training activities as specified in this Biological Evaluation. Therefore, Army training activities will have ***no effect*** due to ***insignificant and discountable effects***.

Wood Stork

No habitat disturbance or manipulation of foraging or roosting areas for the Wood Stork will occur since the Wood Stork restricts itself to standing pools of water and shallow streams. Ground training activities will have no effect on Wood Stork habitat since training activities are restricted within 200 feet of wetlands. Aircraft corridors over the SRS Swamp are mainly over thick expanses of pine, not suited for

nest and roost locations. Therefore, implementation of Army training activities ***may affect but not likely adversely affect*** wood storks due to ***insignificant and discountable effects***.

RCW

Impacts to RCWs will be avoided and minimized through implementation of restrictions on training requirements that would most likely have an effect on RCW habitat, establishment of buffer zones around sensitive areas, education, and tailoring of training events in and around RCW colonies. The Army encourages habitat management activities such as thinning, midstory control, prescribed fire, and adherence to the recovery standards that will benefit RCWs. Therefore, based on proven Army RCW management guidelines, implementation of proposed Army training activities ***may affect but not likely adversely affect RCWs*** because of ***insignificant*** effects.

Shortnosed Sturgeon

Habitat degradation or loss (resulting, for example, from dams, bridge construction, channel dredging, and pollutant discharges), and mortality (for example, from impingement on cooling water intake screens, dredging, and incidental capture in other fisheries) are principal threats to the species' survival. Army training activities are of such low impact that there will be virtually no impact to the Sturgeon. Additionally, Army training activities are restricted from the Savannah for the entire Sturgeon spawning season. The Army estimates only one to two short, low-intensity, training events will occur each year. The Army encourages habitat management activities for the Shortnosed Sturgeon. Therefore, proposed Army training activities will have ***no effect*** due to ***insignificant effects***.

American Bald Eagle

In the past, habitat degradation, pesticides, and poaching have been the main threat to the Bald Eagle. Only one eagle nest lies within the 120,000 acres of training land. A large buffers zone and training restrictions will provide excellent protection to this single nest. Therefore, proposed Army training activities ***may affect, but not likely adversely affect*** Bald Eagles because of ***insignificant*** effects.

American Alligator

No habitat disturbance or incursion into locations where Alligators will occur due to Army training activities. Ground training activities will have no effect on Alligators since training activities are restricted within 200 feet of wetlands and lakes. Therefore, implementation of Army training activities will have ***no affect*** due to ***insignificant and discountable effects***.

CONCLUSION

Overall, based on the best scientific data, the implementation of Army training activities ***may affect but not likely adversely affect*** federally protected species at SRS. Specific, effective, and proven training restrictions, education, and species protection activities are the best management practices to protect TES on SRS. Extensive research and consultation was used to develop this B.E.

Cited References and Research Material

Migratory Bird Treaty Act of 1918

USDA-FS-SR, 2009, Biological Evaluation fir the Red-cockaded Woodpecker Management Plan Savannah River Site, Aiken, South Carolina

USFWS, 2006, Wood stork 5-Year Review, U.S. Fish and Wildlife Service, Southeast Region Jacksonville Ecological Services Field Office

USDOE, May 2005, National Resources Management Plan – Savannah River Site Prepared by the United States Department of Energy by United States Department of Agriculture Forest Service-Savannah River New Ellenton, South Carolina

USDOE, July 1993, Environmental Assessment Natural Resource Management Activities at the Savannah River Site, U.S. Department of Energy Savannah River Operations Office Environmental and Laboratory Programs Office

Senate and House of Representatives of the United States of America in Congress assembled, 1973, Endangered Species Act

Fort Gordon, Georgia, November 2008, Biological Opinion, Colonel John S. Holwick, Headquarters, United States Army Garrison, Fort Gordon 307 Chamberlain Avenue, Fort Gordon, Georgia

U.S. Army Garrison, February 2010, Draft Environmental Assessment, Fort Gordon Drop Zone, Mr. Robert Drumm, Chief, Natural Resource Branch, Fort Gordon, Georgia

U.S. Army Garrison, Fort Gordon, Georgia, September 2008, Integrated Natural Resources Management Plan, U.S. Army Garrison, Fort Gordon, Georgia. Prepared by Gulf South Research Corp.

U.S. Army Training Center, Fort Jackson, SC, Integrated Natural Resources Management Plan and Environmental Assessment, Environmental and Natural Resources Management Division, Directorate of Logistics and Engineering, prepared by Gene Stout and Assoc., Jeff Trousil, Principal Author.

Fort Stewart, Hunter Army Airfield Field, 2008, Sustainable Range Field Card, Environmental and Natural Resources Management Division, Fort Stewart, Georgia

USDA-FS SRS, January 2007 Rev 10, Operations Plan in Support of the Natural Resources Management Plan (May 2005) and IAG Agreement (Sept. 2005), K. Lawrence, Forest Manager

USAEC, May 2007, NEPA Analysis Guidance Manual, Final, Larry Canter, Manroop Chawla, Ron Webster Principal Authors, U.S. Army Environmental Command, Road Aberdeen Proving Ground, MD

USAPHC, May 2010, Operational Noise Consultation Savannah River Site, Ms. Kristy Broska, Environmental Protection Specialist, or Ms. Catherine Stewart, Program Manager, Operational Noise Program, US Army Public Health Command (Provisional) (formerly US Army Center for Health Promotion and Preventive Medicine)

USFWS, Sept 1993, Pondberry Recovery Plan, South East Region, United States Fish and Wildlife Service, Atlanta, Ga.

U.S. Dept. of Commerce, Dec., 1998, Final Recovery Plan for the Short Nosed Sturgeon, U.S. Department of Commerce, prepared by the Shortnosed Sturgeon Recovery Team, National Oceanic and Atmospheric Administration, National Marine Fisheries Service

USFWS, April 1995, Recovery Plan for the Smooth Purple Coneflower, prepared by the N. Murdock, USFWS, Asheville, NC, for USFWS, South East Region, Atlanta, Ga.

USAEC, May 2007, Management Guidelines for the Red-Cockaded Woodpecker on Army Installations, U.S. Army Environmental Command

Federal Facilities Environmental Journal, Spring 2003, Success of the Army's 1996 Red-Cockaded Woodpecker Management Guidelines, Timothy A. Beaty, Albert E. Bivings, Theodore Reid, Terence L. Myers, Stephen D. Parris, Ralph Costa, Timothy J. Hayden, Thomas E. Ayers, Scott M. Farley, and William E. Woodson

Thomas M. Murphy, Wood Stork Taxonomy and Basic Description

USFWS, August 2009, Wood Stork Recovery Action Plan, USFWS Southeast Region, Jacksonville Florida Ecological Services Field Office.

SREL – Div. of Wildlife Ecology and Toxicology, February 1993, Wood Storks of the Birdsville Colony and Swamps of the Savannah River Site General Overview of Research Findings, Malcolm C. Coulter Savannah River Ecology Laboratory Division of Wildlife Ecology and Toxicology

UGA-SREL, August 2001, Wood Stork Conservation and Management for Landowners, University of Georgia, Savannah River Ecology Laboratory and U.S. Fish and Wildlife Service

United States Army Environmental Command Statement for Proposed Actions of Military Training Activities On SRS, Ted Reed, AEC.

United States Corps of Engineer, Engineer Research and Development Center, Construction Engineering Research Laboratory, August 2002, Assessment of Effects of Maneuver Training Activities on Red-cockaded Woodpecker Populations on Fort Stewart, GA, Timothy J. Hayden, Robert H. Melton, Beth Willis, L.B. Martin III, and Tim Beaty

United States Corps of Engineer, Engineer Research and Development Center, Construction Engineering Research Laboratory, February 2002, Assessment of Training Noise Impacts on the Red-cockaded Woodpecker: Final Report, David K. Delaney, Larry L. Pater, Bruce A. MacAllister, Robert J. Dooling, Bernard Lohr, Beth F. Brittan-Powell, Linton L. Swindell, Tim A. Beaty, Larry D. Carlile, and Erice W. Spadgenske

United States Army, Fort Gordon, Georgia and DOE-SR AMIP, Draft Joint Standard Operating Procedure (JSOP), 2011, Donald S. McLean, Charles Borup

Department of the Interior, Fish and Wildlife Service 50 CFR Part 17, Endangered and Threatened Wildlife and Plants, Reclassification of the American Alligator to Threatened due to Similarity of Appearance Throughout the Remainder of its Range.

Smithsonian National Zoological Park, Reptiles and Amphibians, Fact Sheet. Smithsonian Institution.

Savannah River Ecology Laboratory, Herpetology Program, Fact Sheet, and Brochure. Alligators

Recovery Plan for the American Crocodile, Multi-Species Recovery Plan for South Florida, United States Fish and Wildlife Service, Revision May 18th, 1999

American Alligator Fact Sheet, Defenders of the Wildlife, Fact Sheet

United States Fish and Wildlife Service, Bald Eagle Fact Sheet: Natural History, Ecology, and History of Recovery, Arlington, Va., Revised June 2007

Maps

NOAA, August 2009, Bathymetry Maps of Savannah River Sturgeon Habitat Study – Acoustics Study, Dr. Stephania Bolden, NOAA, NMFS.

Savannah River Site, 1:50,000 Military Grid Map

Savannah River Site, 1:50,000 Ecological Map, Air Corridors

Fort Stewart TES Species Aerial Photo

Online Links Resources through the United States Army Corps of Engineers, Engineer Research and Development Center, Construction Engineering Research Laboratory.

http://www.cecer.army.mil/td/tips/indexRESEARCH.cfm?RESEARCH=1&TECHNAME=Military%20Ranges%20and%20Lands

http://www.cecer.army.mil/td/tips/indexAREA.cfm?AREA=10&TECHNAME=Military%20Ranges%20and%20Lands

http://www.cecer.army.mil/td/tips/browse/publications.cfm?AREA=10&TECHNAME=Military%20Ranges%20and%20Lands

Acronyms

AGL – Above Ground Level
AIA – Artillery Impact Area
BE – Biological Evaluation
BRAC – Base Realignment and Closure
CBR – Chemical Biological and Radiological
COE – Contemporary Operating Environment
CPs – Command Posts
CRRC – Combat Rubber Raiding Craft
D-Area – Location found on the Savannah River Site.
DAC – Department of the Army Civilians
DDT - Dichlorodiphenyltrichloroethane
DPTMS – Directorate of Plans, Training, Mobilization, and Security
DOE-SRS – Department of Energy – Savannah River Site
DZs – Drop Zones
EA – Environmental Assessment
ESA – Endangered Species Act
ESMC s – Endangered Species Management Components
FOB – Forward Operating Base
FARP – Forward Arming and Refueling Point
FGRC – Fort Gordon Range Control
FGRC – TFC – Fort Gordon Range Control Training Facility Coordinator
GDPR – Global Defense Posture Realignment
GIS – Global Information System
HESCO Barriers - The HESCO bastion is both a modern gabion used for flood control and military fortification and the name of the British company that developed it in the late 1980's. It is made of a collapsible wire mesh container and heavy duty fabric liner, and used as a temporary to semi-permanent dike or barrier against blast or small-arms. It is used on nearly every United States Military base in Iraq as well as on NATO bases in Afghanistan.
HLZ – Helicopter Landing Zones
IAG – Interagency Agreement
IED – Improvised Explosive Device
ITAM – Integrated Training Area Management
JSOP – Joint Standard Operating Procedure
L-Lake – Is a large manmade lake located on SRS
INRMP – Integrated Natural Resources Management Plan
MOU – Memorandum of Understanding
MOUT – Military Operations on Urban Terrain
NBC – Nuclear Biological and Chemical
NEPA – National Environmental Protection Act
NMFS – National Maritime Fisheries Service
NOAA – National Oceanic Atmospheric Agency
OPFOR – Opposing Forces
PAHs - Polychlorinated aromatic hydrocarbons
Par Pond – Is a large manmade lake located on Savannah River Site
PCBs - Polychlorinated biphenyls
PBGs - Potential Breeding Groups
RCW – Red Cockaded Woodpecker
RFP – Response Force Package
ROM – Refuel on the Move.
SAIA – Small Arms Impact Area
SCUBA – Self-contained Underwater Breathing Apparatus
SOCOM – Special Operation Command
SRNS – Savannah River Nuclear Solutions
SREL – Savannah River Ecology Laboratory
SRS – Savannah River Site

SRSS – Savannah River Site Swamp
TES – Threatened and Endangered Species
TMZ - Territorial Management Zones
TOC – Tactical Operations Center
UMCP – Unit Maintenance Collection Points
USAEC – United States Army Corps of Engineers
USFS-SR – United States Forest Service – Savannah River
USFWS – United States Fish and Wildlife Service
WMD – Weapon of Mass Destruction

DEPARTMENT OF THE ARMY
US ARMY PUBLIC HEALTH COMMAND (PROVISIONAL)
5158 BLACKHAWK ROAD
ABERDEEN PROVING GROUND, MD 21010-5403

MCHB-TS-EON

MEMORANDUM FOR Savannah River Site, Savannah River Nuclear Solutions (Mr. C. Barry Shedrow), Building 705-3C, Aiken, SC 29808

SUBJECT: Operational Noise Consultation, 52-EN-0D55-10, Operational Noise Contours for Proposed Aviation Activity, Savannah River Site, Aiken, South Carolina, 12 April 2010.

1. We are enclosing 2 copies of the consultation.

2. Please contact us if this consultation or any of our services did not meet your needs or expectations.

3. The point of contact is Ms. Kristy Broska, Environmental Protection Specialist or Ms. Catherine Stewart, Program Manager, Operational Noise, US Army Public Health Command (Provisional) [USAPHC (Prov)] [formerly US Army Center for Health Promotion and Preventive Medicine (USACHPPM)], at DSN 584-3829, Commercial (410) 436-3829, or email: kristy.broska@us.army.mil or catherine.stewart@us.army.mil.

FOR THE COMMANDER:

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U.S. Army Public Health Command
(Provisional)

USAPHC

OPERATIONAL NOISE CONSULTATION
NO. 52-EN-0D55-10
OPERATIONAL NOISE CONTOURS
PROPOSED AVIATION ACTIVITY
SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA
12 APRIL 2010

Preventive Medicine Survey: 40-5f1

DEPARTMENT OF THE ARMY
US ARMY PUBLIC HEALTH COMMAND (PROVISIONAL)
5158 BLACKHAWK ROAD
ABERDEEN PROVING GROUND, MD 21010-5403

MCHB-TS-EON

EXECUTIVE SUMMARY
OPERATIONAL NOISE CONSULTATION
NO. 52-EN-0D55-10
OPERATIONAL NOISE CONTOURS
PROPOSED AVIATION ACTIVITY
SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA
12 APRIL 2010

1. PURPOSE. To address the noise impacts of the proposed Army aviation activity at Barnwell Regional Airport (BRA) and the Department of Energy's Savannah River Site (SRS).

2. CONCLUSIONS.

a. The projected operating environments at BRA and SRS would not generate A-weighted Day Night average Noise Level (ADNL) noise contours. The lack of ADNL contours indicates that annual average noise levels from the aviation activity are compatible with the surrounding environment. Yet, there is potential for individual events to cause annoyance and possibly generate noise complaints.

b. There is a potential that aircraft utilizing the BRA and the SRS airspace may cause annoyance to those living near the flight tracks. However, the majority of the land near the flight tracks is undeveloped.

3. RECOMMENDATIONS.

a. Include the information from this consultation in the appropriate National Environmental Policy Act documentation.

b. To reduce the annoyance potential from the proposed aviation activity:

- Establish a noise complaint management program.
- Develop a public notification system via the Public Affairs Office regarding the potential for noise when the aviation training occurs.
- Monitor both the noise environment and any proposed land use changes surrounding the facility.

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NO. 52-EN-0D55-10
OPERATIONAL NOISE CONTOURS
PROPOSED AVIATION ACTIVITY
SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA
12 APRIL 2010

1. REFERENCES. A list of the references used in this consultation is in Appendix A. A glossary of terms and abbreviations used are in Appendix B. A vicinity map is in Appendix C.

2. AUTHORITY. The Army Environmental Command, Aberdeen Proving Ground, MD requested and funded this study.

3. PURPOSE. To address the noise impacts of the proposed Army aviation activity at Barnwell Regional Airport and the Department of Energy's Savannah River Site.

4. GENERAL.

a. The Department of Energy has agreed in principle to allow Army aviation activity at their Savannah River Site (SRS) in Aiken, South Carolina.

b. Barnwell Regional Airport (BRA), located 6 miles west of the SRS, has agreed in principle to allow the Army to use its airport for fixed/rotary wing operations. The BRA is an interim Drop Zone/Landing Zone (DZ/LZ) location, which will be made available for aviation units, until a usable DZ/LZ(s) is constructed on the SRS.

5. PROJECTED AVIATION ACTIVITY.

a. The projected aviation activity will be the same at the BRA and the SRS. The primary fixed wing aircraft would be the C-130 Hercules. Smaller fixed wing aircraft such as the C-235 Casa, C-23 Sherpa, and V-22 Osprey may occasionally be used. The projected rotary wing aircraft includes the CH-47 Chinook and the UH-60 Blackhawk.

b. Currently, the average size of an Airborne Infantry Battalion is 550 soldiers. This number was used to calculate the total number of passes required for an Airborne Infantry Battalion to deploy soldiers onto BRA and the SRS.

c. Tables 1 - 4 list the projected aviation activity. By averaging the number of aircraft, days and hours utilized, the total number of sorties in one day would not be expected to exceed more than 1 hour. Due to the low number of aircraft flying, the activity will not generate a Zone II (65 A-weighted Day Night average Level (ADNL)) noise contour or greater.

TABLE 1. PROJECTED ANNUAL AVIATION ACTIVITY.

ANNUAL OPERATIONS	C-130	CH-47	UH-60
Number of days utilized	4	4	4
Number of hours utilized	< 1	< 1	< 1
Number of minutes utilized	19	39	32
Total number of aircraft	32	64	72
Number of passes	64	128	72

TABLE 2. PROJECTED C-130 ACTIVITY OCCURRING IN A 24-HOUR PERIOD.

24-HOUR PERIOD	C-130
Number of hours utilized	< 1
Approximate number of minutes utilized	5 minutes
Total number of aircraft	8
Number of passes	2

TABLE 3. PROJECTED CH-47 ACTIVITY OCCURRING IN A 24-HOUR PERIOD.

24-HOUR PERIOD	CH-47
Number of hours utilized	< 1
Approximate number of minutes utilized	9 minutes
Total number of aircraft	16
Number of passes	32

TABLE 4. PROJECTED UH-60 ACTIVITY OCCURRING IN A 24 HOUR PERIOD.

24-HOUR PERIOD	UH-60
Number of hours utilized	< 1
Approximate number of minutes utilized	8 minutes
Total number of aircraft	18
Number of passes	18

d. To demonstrate that the proposed aviation activity would not reach Noise Zone II levels, one can look at the method of calculating Day Night average (DNL).

(1) The most common aircraft utilizing the BRA as a DZ will be the CH-47. The A-weighted Sound Exposure Level (ASEL) of a CH-47 at 1,000 feet Above Ground Level (AGL) is 87.8 decibels (dBA). This information can be used to determine the ADNL. The SEL is sound normalized to one second. If there is only one flight per day, the ADNL can be calculated by subtracting a constant representing 10 times the logarithm of the 86,400 seconds in a 24 hour day, which is 49.4 dB. So, for one CH-47 flyover at 1,000 feet (87.8 dB ASEL), the ADNL would be 38.4 dB ADNL. The ADNL increases 3 dB for every doubling of operations, so the ADNL for 2 flights would be 41.4 dB ADNL, 4 flights per day would equal 44.4 dB ADNL, and 8 flights per day would equal 47.4 dB ADNL. By continuing these calculations, it would take 512 CH-47 flights occurring over one location within a 24-hour period to achieve a 65.4 dB ADNL. Based upon the projected operational parameters and the limited number of aircraft utilizing the airspace, it is unlikely that an incompatible noise zone would ever be generated for the SRS or the BRA.

(2) If the BRA is utilized by either of the helicopters as a LZ, the projected number of sorties (CH-47 32 sorties or UH-60 18 sorties) in 24-hour period would not generate a Zone II (65 dB ADNL) noise contour (Table 5). As the CH-47 approaches the runway at 500 feet AGL, the ASEL is 92.4 dBA and at 250 feet the ASEL is 96.8 dBA. As the UH-60 approaches the runway at 500 feet AGL, the ASEL is 87.8 dBA and at 250 feet AGL the ASEL is 92.4 dBA.

TABLE 5. PROJECTED HELICOPTER ADNL NOISE LEVELS.

NUMBER OF SORTIES	CH-47 ADNL 250’ AGL	CH-47 ADNL 500’ AGL	UH-60 ADNL 250’ AGL	UH-60 ADNL 500’ AGL
1	47.4	43	43	38.4
2	50.4	46	46	41.4
4	53.4	49	49	44.4
8	56.4	52	52	47.4
16	59.4	55	55	50.4
32	62.4	58	---	---

e. Although the proposed aviation activity will not generate a Zone II (65 dB ADNL) noise contour, there is still the potential that individual aircraft overflights could annoy people and possibly generate complaints.

6. AVIATION ANNOYANCE POTENTIAL.

a. Scandinavian Studies (Rylander 1974 and Rylander 1988) have found that a good predictor of annoyance at airfields with 50 to 200 operations per day is the maximum level of the 3 loudest events. The SELCalc2 Program (U.S. Air Force 2005) was used to calculate the maximum A-weighted (dBA) noise levels for the projected aircraft at the BRA and the SRS. The levels are listed in Table 6. These maximum levels are compared with the levels listed in Table 7 to determine the percent of the population that would consider itself highly annoyed. While annoyance levels may be lower at flight corridors with fewer than 50 operations per day, it is a tool in providing some indication of the percent of people who might be annoyed.

TABLE 6. AIRCRAFT MAXIMUM NOISE LEVELS.

Slant Distance (feet)	Maximum Level, dBA		
	C-130	CH-47	UH-60
500	98	84	80
1,000	85	78	73
1,500	80	74	69
2,000	77	71	66
2,500	75	68	--
3,000	73	66	--
4,000	69	--	--
5,000	66	--	--

TABLE 7. PERCENTAGE OF POPULATION HIGHLY ANNOYED FROM AIRCRAFT NOISE. (Rylander 1974)

Maximum, dBA	Highly Annoyed
90	35%
85	28%
80	20%
75	13%
70	5%

b. Table 8 indicates the percent of population that would consider itself highly annoyed correlated with maximum noise levels for specific aircraft overflights. The correlation is based on the Rylander studies which investigated airfields with 50 to 200 operations per day.

TABLE 8. OVERFLIGHT ANNOYANCE POTENTIAL[1].

Source	Ground Track Distance[2]	dBA Maximum[3]	Population Highly Annoyed[4]
CH-47 – 500’ AGL	0’	84	26%
	1320' (1/4 mile)	73	10%
	1760’ (1/3 mile)	71	7%
	2640' (1/2 mile)	66	<1%
CH-47 – 1000’ AGL	0’	77	16%
	1320' (1/4 mile)	72	8%
	1760’ (1/3 mile)	70	5%
	2640' (1/2 mile)	66	<1%
CH-47 – 2000’ AGL	0’	70	5%
	1320' (1/4 mile)	68	2%
	1760’ (1/3 mile)	67	1%
	2640' (1/2 mile)	65	<1%
CH-47 – 3000’ AGL	0’	66	<1%
	1320' (1/4 mile)	65	<1%
UH-60 – 500’ AGL	0’	80	20%
	1320' (1/4 mile)	69	4%
	1760’ (1/3 mile)	66	<1%

[1] Percent annoyance shown is based upon 50 to 200 overflights per day. (Rylander 1974)
[2] Distance between receiver and the point on Earth at which the aircraft is directly overhead.
[3] Obtained via SelCalc Program (U.S. Air Force 2005)
[4] Calculated percentage based upon regression using the known values in Table 7.

TABLE 8. OVERFLIGHT ANNOYANCE POTENTIAL[1], Cont'd.

Source	Ground Track Distance[2]	dBA Maximum[3]	Population Highly Annoyed[4]
UH-60 – 1000' AGL	0'	73	10%
	1320' (1/4 mile)	68	2%
	1760' (1/3 mile)	65	<1%
UH-60 – 2000' AGL	0'	66	<1%
	1320' (1/4 mile)	64	<1%
	1760' (1/3 mile)	62	<1%
C-130 – 1000' AGL	0'	85	28%
	1320' (1/4 mile)	79	19%
	1760' (1/3 mile)	77	16%
	2640' (1/2 mile)	72	8%
	5280' (1 mile)	64	<1%
C-130 – 2000' AGL	0'	77	16%
	1320' (1/4 mile)	75	13%
	1760' (1/3 mile)	74	11%
	2640' (1/2 mile)	71	7%
	5280' (1 mile)	64	<1%
C-130 – 3000' AGL	0'	73	10%
	1320' (1/4 mile)	72	8%
	1760' (1/3 mile)	71	7%
	2640' (1/2 mile)	69	4%
	5280' (1 mile)	63	<1%
C-130 – 4000' AGL	0'	69	4%
	1320' (1/4 mile)	69	4%
	1760' (1/3 mile)	68	2%
	2640' (1/2 mile)	67	1%
	5280' (1 mile)	62	<1%

[1] Percent annoyance shown is based upon 50 to 200 overflights per day. (Rylander 1974)
[2] Distance between receiver and the point on Earth at which the aircraft is directly overhead.
[3] Obtained via SelCalc Program (U.S. Air Force 2005)
[4] Calculated percentage based upon regression using the known values in Table 7.

c. Also based on Rylander's results, Figure 1 provides a graphical depiction of the data presented in Table 8 for the percent of population annoyed by a C-130. The figure shows that the levels are based on the receivers being located directly under the C-130 at 1,000 feet AGL.

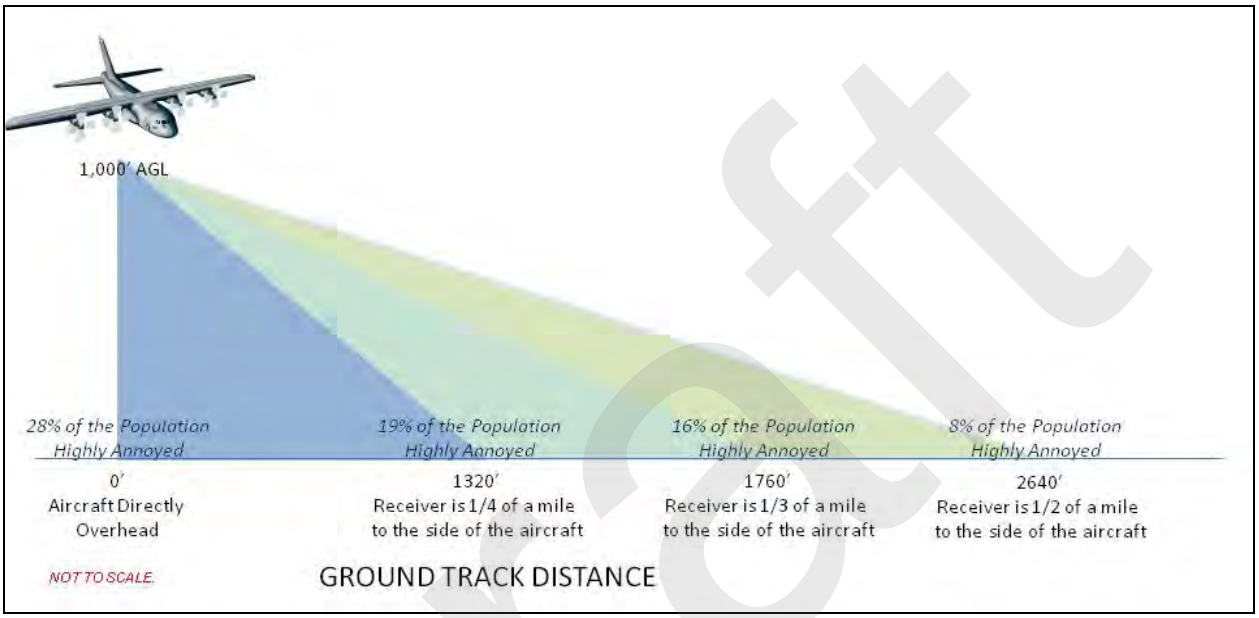

FIGURE 1. C-130 OVERFLIGHT ANNOYANCE POTENTIAL
(More than 50 Daily Overflights).

7. BARNWELL REGIONAL AIRPORT ACTIVITY.

a. Existing Operations. The BRA is a small general aviation airfield that has approximately 65 flights per day (23,750 per year).

b. Projected Army Operational Parameters. The projected operational parameters for the BRA were provided by Fort Gordon and are as follows:

- **Approach:** The recommended, primary approach would be from the southwest to the northeast using runway 5/23 for parachute operations (Figure 2). This route crosses over the city of Barnwell's most sparsely populated area. The minimum jump altitude is 1,000 feet AGL over Runway 5/23.

- **Fixed Wing Aircraft:**
  - Fixed wing aircraft maintain a minimum altitude of 3,000 feet AGL, until approximately 6 miles from BRA. At that point, aircraft may descend to jump altitude in vicinity of runway 5/23. One C-130 Aircraft would be allowed to land on BRA per month due to aircraft weight on the runway. Smaller aircraft such as a C-235 Casa, C-23 Sherpa, and V-22 Osprey may be allowed more frequent use of the airport for landing.
  - The total estimated number of soldiers deploying to SRS using BRA for Airborne Operations would be 2,350.
  - No airborne elements larger than battalion size are anticipated to be inserted into BRA at any one time. Currently, the average size of an Airborne Infantry Battalion is 550 soldiers.

- **Rotary Wing Aircraft:**
  - Rotary wing aircraft would maintain a minimum altitude of 3,000 feet AGL, until approximately 6 miles from BRA. At that point, aircraft may descend to jump altitude in vicinity of runway 5/23.
  - The estimated number of soldiers deploying to SRS using BRA by rotary wing aircraft may be as low as 24 soldiers, up to a company size elements of 150 soldiers on runway 5/23 at any one time.
  - Conducting airborne training from rotary wing aircraft may require repeated passes and loitering of rotary wing aircraft to allow for loading of troops, gain proper jump altitude, verify winds, and then deploy troops.

- **Departure:** The aircraft would exit the airfield to the northeast crossing over sparsely populated areas. The aircraft would either exit the airspace or approach the runway for another drop.

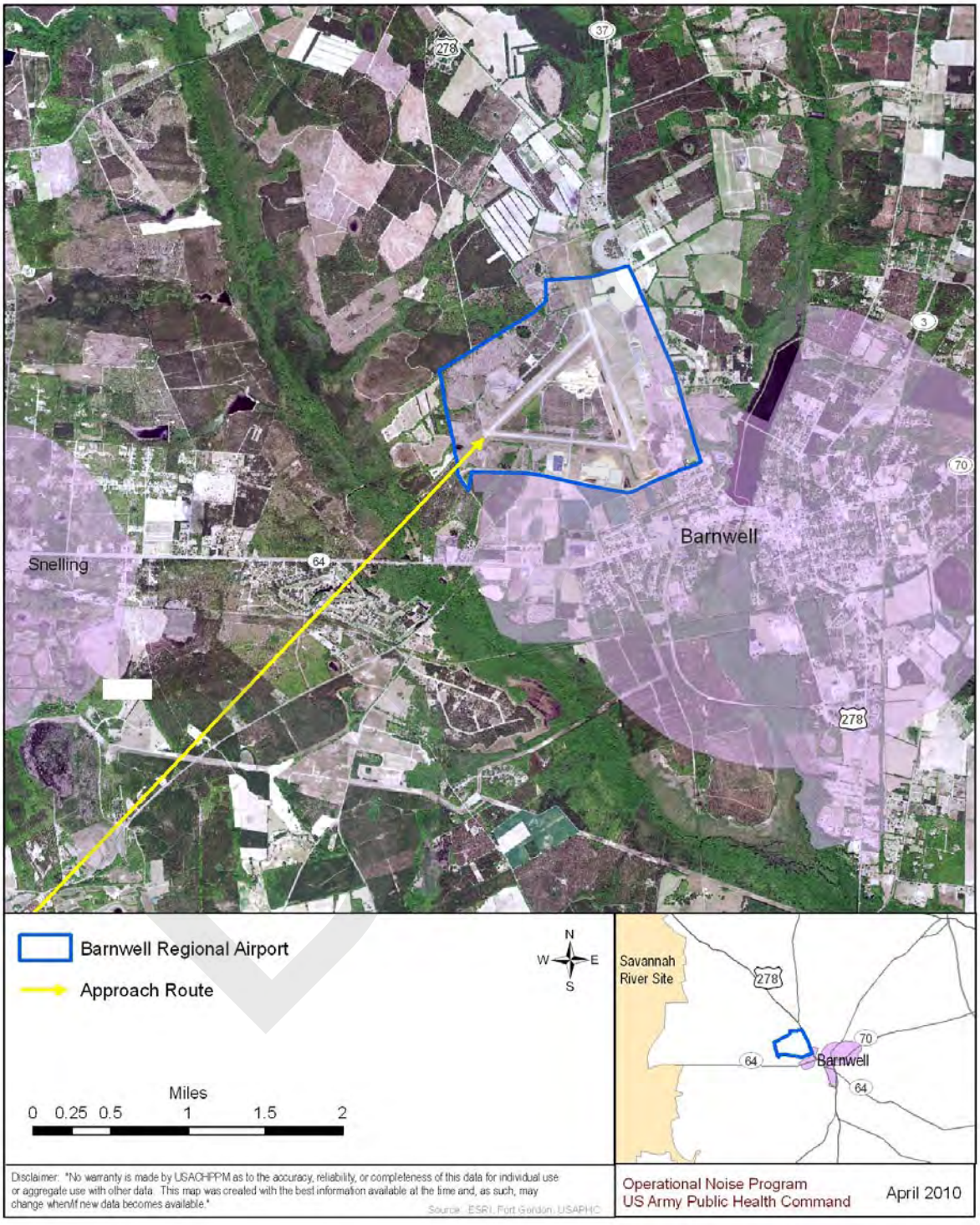

FIGURE 2. APPROACH ROUTE BARNWELL REGIONAL AIRPORT

c. Fixed Wing. Based on the annoyance tables in section 6, up to 28 percent of the population may consider itself highly annoyed from a C-130 overflight. The majority of the land under the flight route to BRA is undeveloped. The percent of population annoyed varies based on the altitude of the aircraft.

(1) At the minimum jump altitude of 1,000 feet AGL directly under the flight path, up to 28 percent of the population may consider itself highly annoyed from a C-130 overflight. There is a small residential area directly under the flight path approximately 1.25 mile from the end of the runway.

(2) Approaching BRA with an altitude of 2,000 feet AGL directly under the flight path, up to 16 percent of the population may consider itself highly annoyed from a C-130 overflight.

(3) Approaching BRA with an altitude of 3,000 feet AGL directly under the flight path, up to 10 percent of the population may consider itself highly annoyed from a C-130 overflight.

(4) A higher jump altitude for the C-130 of 1,500 feet AGL could reduce the annoyance potential directly under the flight route to 20 percent. Based on community reaction to the C-130 overflights, if needed , the Army could increase the minimum jump altitude to 1,500 feet AGL.

d. Rotary Wing. Based on the annoyance tables in section 6, up to 16 percent of the population may consider itself highly annoyed from a CH-47 overflight and up to 10 percent of the population may consider itself highly annoyed from a UH-60 overflight. The majority of the land under the flight route to BRA is undeveloped. The percent of population annoyed varies based on the altitude of the aircraft.

(1) CH-47 Activity.

(a) At the minimum jump altitude of 1,000 feet AGL directly under the flight path, up to 16 percent of the population may consider itself highly annoyed from a CH-47 overflight. There is a small residential area directly under the flight plan approximately 1.25 mile from the end of the runway.

(b) Approaching BRA with an altitude of 2,000 feet AGL directly under the flight path, up to 5 percent of the population may consider itself highly annoyed from a CH-47 overflight.

(c) Approaching BRA with an altitude of 3,000 feet AGL directly under the flight path, less than 1 percent of the population may consider itself highly annoyed from a CH-47 overflight.

(2) UH-60 Activity.

(a) At the minimum jump altitude of 1,000 feet AGL directly under the flight path, up to 10 percent of the population may consider itself highly annoyed from a UH-60 overflight. There is a small residential area directly under the flight plan approximately 1.25 mile from the end of the runway.

(b) Approaching BRA with an altitude of 2,000 feet AGL directly under the flight, path less than 1 percent of the population may consider itself highly annoyed from a UH-60 overflight.

e. ANNOYANCE POTENTIAL. There is a potential that proposed Army aircraft utilizing the BRA airspace and airfield may cause annoyance to those living near the flight tracks.

8. SAVANNAH RIVER SITE ACTIVITY.

a. Fixed Wing and Rotary Wing Air Corridors. The Department of Energy – Savannah River (DOE-SR) requested measures be provided to control access of Army aircraft in SRS airspace. The military aircraft will have specific flight corridors into the SRS airspace (Figure 3).

b. Projected DZ Operational Parameters. The projected operational parameters for the fixed wing DZ at SRS were provided by Fort Gordon and are as follows:

- **Approach:** The primary approach would be from the southwest to the northeast (Figure 4). Aircraft may approach from the northwest to southeast if conditions warrant. The minimum jump altitude is 1,000 feet AGL. Exiting the DZ the aircraft would turn to avoid overflight of Plant Vogtle Electric Power Generating Plant.

- **Fixed Wing Aircraft:** Fixed wing aircraft maintain a minimum altitude of 4,000 feet AGL, until approximately 6 miles from the DZ. At that point aircraft may descend to jump altitude.

c. C-130 Annoyance Potential. There is a potential that proposed C-130 aircraft utilizing the DZ may cause annoyance to those living near the flight tracks. Based on the potential annoyance tables in section 6, up to 28 percent of the population may consider itself highly annoyed from a C-130 overflight. However, the majority of the land under the flight route to the SRS is undeveloped and the fixed wing DZ is situated well away from residential areas.

(1) At the minimum jump altitude of 1,000 feet AGL directly under the flight path, up to 28 percent of the population may consider itself highly annoyed from a C-130 overflight. There are no residential areas directly under the flight path.

(2) Approaching the DZ with an altitude of 2,000 feet AGL directly under the flight path, up to 16 percent of the population may consider itself highly annoyed from a C-130 overflight. There may be scattered residences near the flight path.

(3) Approaching the DZ with an altitude of 3,000 feet AGL directly under the flight path, up to 10 percent of the population may consider itself highly annoyed from a C-130 overflight. There may be scattered residences near the flight path.

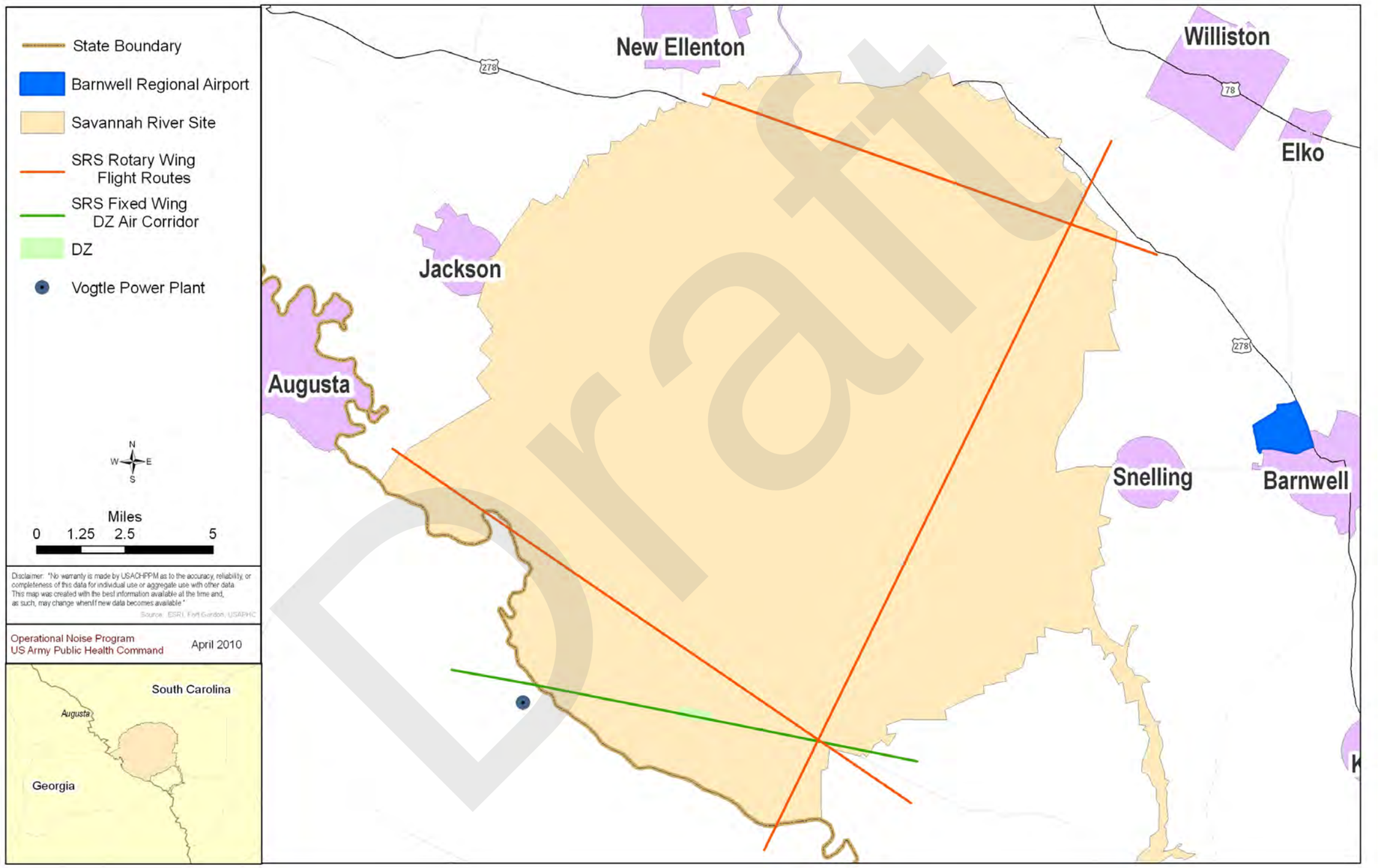

FIGURE 3. SAVANNAH RIVER SITE

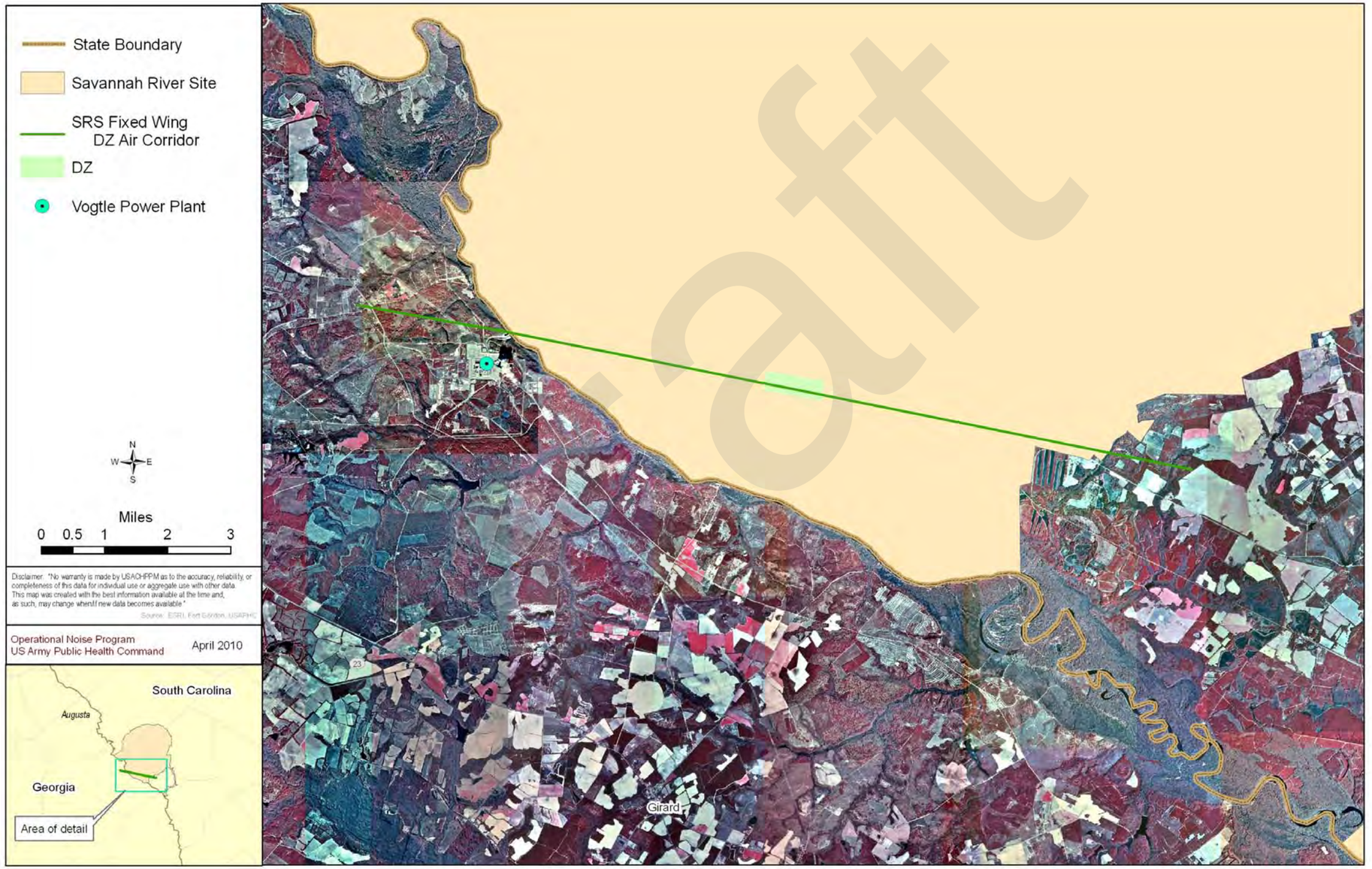

FIGURE 4. FIXED WING DROP ZONE SAVANNAH RIVER SITE

d. Projected LZ Operational Parameters. The projected operational parameters for the rotary wing LZ at SRS were provided by Fort Gordon and are as follows:

- **Approach:** The Army recommends 3 rotary wing air corridors be provided for aircraft to access SRS training lands. These are labeled routes Alpha, Bravo, and Charlie (Figure 5). Once in the SRS airspace, the Army helicopters will follow designated routes provided by the DOE-SR Aviation.

- **Rotary Wing Aircraft:** Aircraft would maintain a minimum altitude of 3,500 feet AGL before crossing over the SRS boundary. Once aircraft cross into SRS, aircraft may assume training altitudes as requested and approved by DOE-SR Aviation. Aircraft must maintain course, following the predetermined route until the aircraft near the training location or LZ. At that time, the aircraft may depart the predetermined route and land on the approved LZ. To depart the LZ, the aircraft would follow the route to the next LZ or depart SRS airspace following the predetermined route off site.

- **LZ Locations:** The helicopter LZs are not predefined. The LZs would likely alternate between clear cuts and give the troops some latitude during training.

e. Rotary Wing Annoyance Potential.

(1) Based on the minimum altitude of 3,500 feet AGL at the SRS boundary, the potential annoyance from the rotary wing aircraft is less than 1 percent.

(2) Within the SRS boundary, the percent of population annoyed would vary based on the altitude of the helicopter; if the helicopter is near the boundary; and there if there are residences nearby. The majority of the land surrounding the SRS is undeveloped.

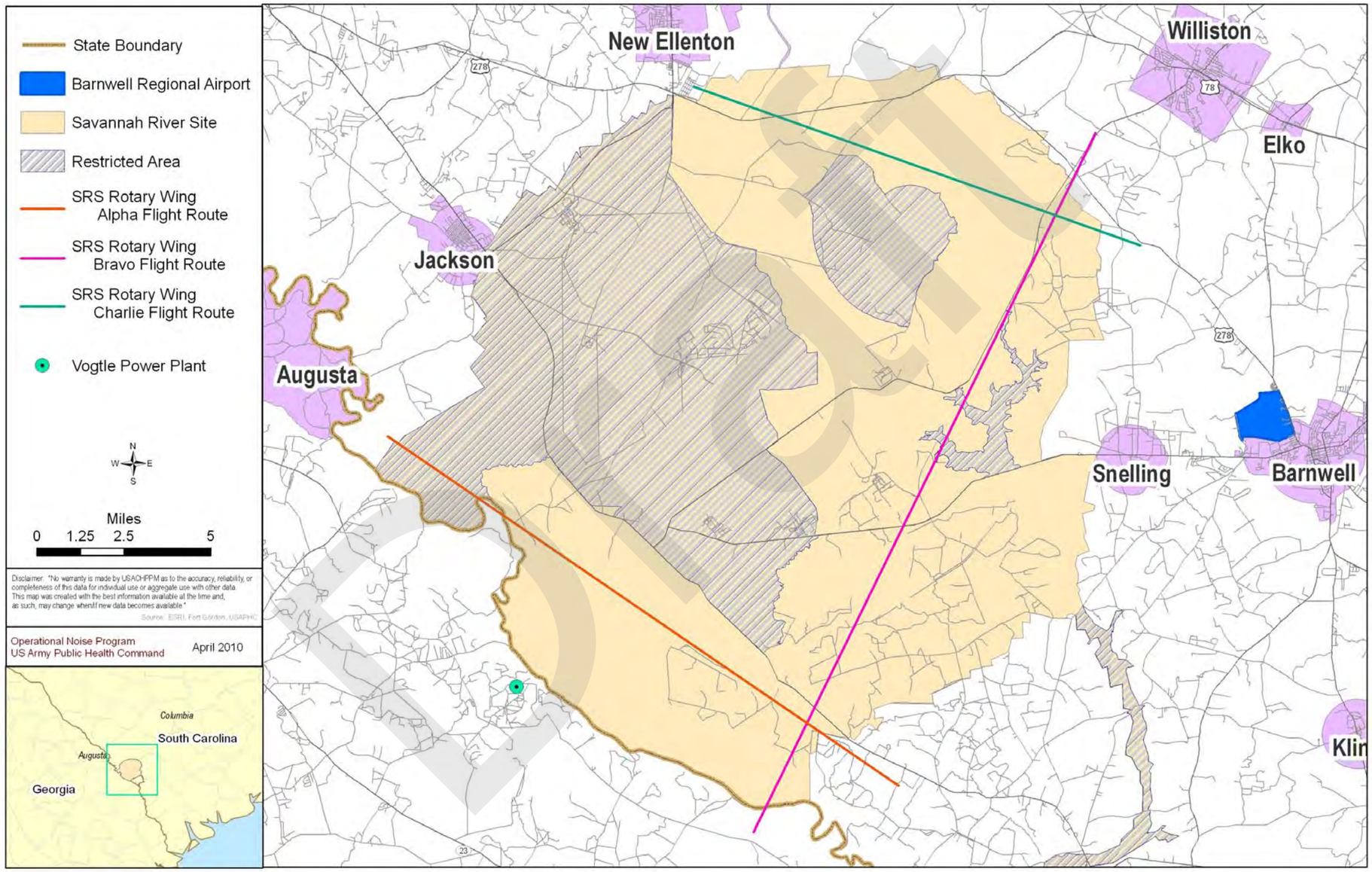

FIGURE 5. ROTARY WING AIRCRAFT ROUTES SAVANNAH RIVER SITE

9. MITIGATION TECHNIQUES TO REDUCE NOISE COMPLAINTS.

a. As the aviation activity at BRA and SRS will not be conducted on a routine basis, the best option for reducing the potential of noise complaints is good community relations and public notification. The potential for noise complaints may be reduced by providing the news media with press releases prior to the aviation training.

b. The press release would include a telephone number that the community can use to receive additional information or complain about the noise. The news media would be monitored to make sure the information is being released to the community in a timely manner.

- SAMPLE: "Special Activity Notice – _____ plans to conduct several aviation training missions at _____. The aviation training mission may include equipment/troop drops utilizing _____ and _____ wing aircraft. The _____ will be conducting this _____ exercise during the period of ___ Nov to ___ Nov from _____ am to _____ pm. If the weather conditions are unfavorable, the training may be rescheduled. Questions should be directed to 610-xxx-xxxx or 800-xxx-xxxx."

10. CONCLUSIONS.

a. The projected operating environments at BRA and SRS would not generate ADNL noise contours. The lack of ADNL contours indicates that annual average noise levels from the aviation activity are compatible with the surrounding environment. Yet, there is potential for individual events to cause annoyance and possibly generate noise complaints.

b. There is a potential that aircraft utilizing the BRA and the SRS airspace may cause annoyance to those living near the flight tracks. However, the majority of the land under the flight track is undeveloped.

11. RECOMMENDATIONS.

a. Include the information from this consultation in the appropriate National Environmental Policy Act (NEPA) documentation.

b. To reduce the risk of noise complaints from the proposed aviation activity:

- Establish a noise complaint management program.
- Develop a public notification system via the Public Affairs Office regarding the potential for noise when the aviation training occurs.
- Monitor both the noise environment and any proposed land use changes surrounding the facility.

KRISTY BROSKA
Environmental Protection Specialist
Operational Noise

APPROVED:

CATHERINE STEWART
Program Manager
Operational Noise

APPENDIX A

REFERENCES

1. Rylander, et. al., 1974, "Re-Analysis of Aircraft Noise Annoyance Data Against the dBA Peak Concept", Journal of Sound and Vibration, Volume 36, pages 399 - 406.

2. Rylander and Bjorkman, 1988, "Maximum Noise Levels as Indicators of Biological Effects", Journal of Sound and Vibration, Volume 127, pages 555 - 563.

3. The U.S. Air Force, 2005, SELcalc2 Noise Model, Wright-Patterson Air Force Base, OH.

APPENDIX B

GLOSSARY OF TERMS, ACRONYMS & ABBREVIATIONS

B-1. GLOSSARY OF TERMS.

Above Ground Level – distance of the aircraft above the ground.

A-weighted Sound Level - the ear does not respond equally to sounds of all frequencies, but is less efficient at low and high frequencies than it is at medium or speech range frequencies. Thus, to obtain a single number representing the sound pressure level of a noise containing a wide range of frequencies in a manner approximating the response of the ear, it is necessary to reduce, or weight, the effects of the low and high frequencies with respect to the medium frequencies. Thus, the low and high frequencies are de-emphasized with the A-weighting. The A-scale sound level is a quantity, in decibels, read from a standard sound-level meter with A-weighting circuitry. The A-scale weighting discriminates against the lower frequencies according to a relationship approximating the auditory sensitivity of the human ear. The A-scale sound level measures approximately the relative "noisiness" or "annoyance" of many common sounds.

Average Sound Level - the mean-squared sound exposure level of all events occurring in a stated time interval, plus ten times the common logarithm of the quotient formed by the number of events in the time interval, divided by the duration of the time interval in seconds.

Day-Night Average Sound Level (DNL) - the 24-hour average frequency-weighted sound level, in decibels, from midnight to midnight, obtained after addition of 10 decibels to sound levels in the night from midnight up to 7 a.m. and from 10 p.m. to midnight (0000 up to 0700 and 2200 up to 2400 hours).

Decibels (dB) – a logarithmic sound pressure unit of measure.

Ground Track Distance – the distance between the receiver and the point on the Earth at which the aircraft is directly overhead.

Noise – any sound without value.

Slant Distance – the line of sight distance between the receiver and the aircraft. The slant distance is the hypotenuse of the triangle represented by the altitude AGL of the aircraft and the distance between the receiver and the aircraft's ground track distance.

Sound Exposure Level (SEL) – a constant sound level which as the same amount of energy in 1 second as the original sound event.

B-2. GLOSSARY OF ACRONYMS AND ABBREVIATIONS.

ADNL	A-weighted Day Night average Level
AGL	Above Ground Level
ASEL	A-weighted Sound Exposure Level
BRA	Barnwell Regional Aiport
dB	Decibels
dBA	Decibels, A-weighted
DNL	Day Night average Level
DOE-SR	Department of Energy Savannah River
DZ	Drop Zone
LZ	Landing Zone
MAX	Maximum sound level
SEL	Sound Exposure Level
SRS	Savannah River Site

APPENDIX C

VICINITY MAP

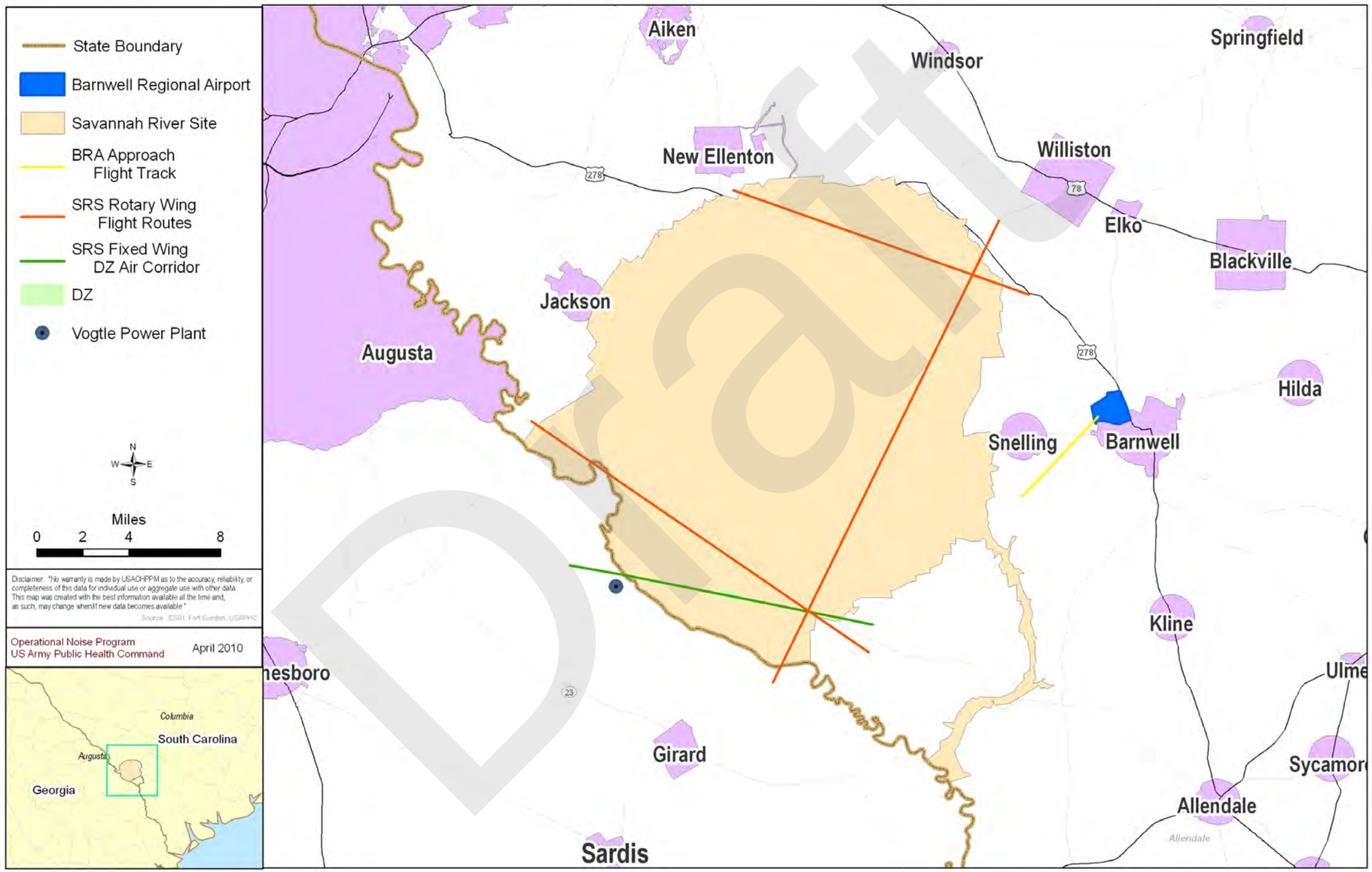

FIGURE C. BARNWELL REGIONAL AIRPORT AND SAVANNAH RIVER SITE VICINITY MAP

United States Department of the Interior

FISH AND WILDLIFE SERVICE
176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407

April 18, 2011

Mr. Donald S. McLean
Training Facility Coordinator
Department of the Army
U.S. Army Installation Management Command
Headquarters, United States Army Garrison, Fort Gordon
307 Chamberlain Avenue
Fort Gordon, GA 30905-5730

Re: Biological Evaluation for Proposed Army Training Activities on the Department of Energy Savannah River Site, Aiken, SC
FWS Log No. 42410-2011-I-0197

Dear Mr. McLean:

The U.S. Fish and Wildlife Service (Service) has reviewed the Biological Evaluation (BE) received at the 2011 U.S. Army/Service Red-cockaded Woodpecker (RCW) Workshop on the above-referenced training activity at the Department of Energy (DOE), Savannah River Site (SRS), in Aiken, Georgia. The following comments are provided in accordance with the Sikes Act, the National Environmental Policy Act (NEPA), and section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*).

The Department of the Defense (DOD) is proposing Army military training activities at the SRS site to supplement Army wide shortages of available training lands. The proposal is for non-live fire training including Army Aviation (Fixed and Rotary Wing), Light Maneuver Forces (rubber boat watercraft, wheeled vehicles, and foot traffic), and Service Support Units (Supply, Maintenance, Transportation, Health Services, Light Engineers, Military Intelligence, Chemical and Signal). According to the BE, Army activities are secondary and will not interfere with DOE missions, operations, and activities at SRS. The Fort Gordon Range Control – Training Facility Coordinator (FGRC-TFC) will implement restrictions on training requirements to minimize and avoid impacts to RCWs such as cluster restrictions and avoidance. The DOD has determined that this action is not likely to adversely affect the RCWs at SRS.

In 1996, the Army developed a framework for military training and RCW management and monitoring on Army installations within the "Management Guidelines for the Red-cockaded Woodpecker on Army Installations" (Army Guidelines). These Guidelines were revised and approved by the Service in 2007 (Hayden 2007). The Guidelines "provide standard RCW management guidance to Army installations for developing endangered species management

components (ESMCs) for the RCW as part of an installation's Integrated Natural Resource Management Plan (INRMP)." These Guidelines have been established under the authority of the Sikes Act, which provide for the cooperation between the Department of the Interior and the DOD in regards to the Endangered Species Act and the National Environmental Policy Act.

In addition, the U.S. Department of Agriculture Forest Service (FS) has been managing SRS since the 1950's with reforestation activities and prescribed fire. The 2000 Savannah River Site Red-cockaded Woodpecker Management Plan was amended in 2009 incorporating elements of both the Service's RCW Recovery Plan and the 2005 United States DOE Natural Resources Management Plan for the Savannah River Site (NRMP). The SRS RCW population is identified as 1 of 10 secondary core populations in the 2003 RCW Recovery Plan (Recovery Plan).

The Service is concerned about two separate factors regarding the proposed action. Primarily, the Army Guidelines will not directly apply given that the training is scheduled to occur in an area that is not a DOD or Army-managed installation. In addition, the SRS population has never been exposed to military training which emphasizes the importance of proper management and monitoring. Effective monitoring will be necessary for all concerned agencies to determine what factors would contribute to a potential decline in future population growth at SRS including natural, management, military training, or both. The mutual interests of SRS, the Army and the Service are to support training while achieving the recovery objective for the Savannah River Secondary Core RCW population.

Training

Based on the information in the BE and your phone conversation with Paula Sisson of this office on April 11, 2011, military training activities will not occur within the 200' buffer of cavity trees as prescribed in the Army Guidelines. Because there are 120,000 acres available for training, the FGRC-TFC has restricted all training within 200' of any RCW cavity tree and training activities within the buffer will be limited to a transient nature.

Additionally, the Service recommends that GIS coordinates for clusters are provided to Army units as part of their natural resource preparation prior to on-the-ground training. All cavity trees and cavity start trees must be marked or painted before training begins. Furthermore, training records should be provided to the Service by FGRC-TCF with information regarding Army units, their location, dates and activities on SRS.

Monitoring and Management

Both the RCW Recovery Plan and the 2007 Army Guidelines recommend an average annual growth of 5% (active clusters or PBGs). Moreover, Army Guidelines provide that all installations failing to achieve this growth rate will informally consult with the Service to determine actions that are necessary to amend limiting conditions. The population at SRS has

continued to grow since 1985 to 2009. However, for a 4 year period (2003-2006), the population at SRS remained dormant. The Recovery Plan also recommends the initiation of formal consultation if the number of active clusters decreases by 10 percent or more during one year, or decreases by 10% during a 5-year period.

The SRS population has grown from 3 active clusters in 1985 to 52 active clusters in 2009 in response to aggressive management. The population increased from 29 to 52 active clusters from 1998 to 2009, with an average annual geometric growth rate for that 11-year growth period of 0.055 (5.5%). Yet, the SRS population during 2003-2006 was stagnant at 45 active clusters for four consecutive years, without any growth. For the last five growth-years, (2004-2009) the average annual geometric growth rate was 0.029 (2.9%).

Monitoring and management are vital elements that should continue at SRS to determine the effects of training that may influence population trends. This information is important to analyze the potential for any future limitations to population growth and to assess the role of contributing natural or man-made factors, including Army training.

The FS RCW recovery management at SRS has been successful. However, in order to be consistent with the Army Guidelines, the Service recommends the following practices:

- 100% of the nestlings at SRS should be banded. Complete banding may provide important data if the population fails to grow or declines, relative to the subsequent analysis that would be required to identify any role of military training.
- 5 recruitment clusters should be provided each year at SRS, or 10% of the total number of active clusters (according to a phone conversation between Tracy Grazia with the FS and Paula Sisson of this office on April 12, 2011, recruitment clusters are provided by 10% each year, however, recruitment are currently overstocked). Recruitment clusters should be located no further than 1 mile from active clusters.
- SRS should anticipate a short-term RCW population goal of 5% average growth not limited by habitat until 2015.

Based on the information provided, we will concur with your determination that the proposed action is not likely to adversely affect resources under the jurisdiction of the Service that are currently protected by the Act, including the RCW. Therefore, the requirements of Section 7 of the Act have been fulfilled relative to the proposed action, and no further consultation is necessary at this time. However, obligations under Section 7 of the Act must be reconsidered if: (1) new information reveals that the proposed action may affect listed species in a manner or to an extent not previously considered, (2) the proposed action is subsequently modified to include activities which were not considered during this consultation; or (3) new species are listed or critical habitat designated that might be affected by the proposed action.

If you have any questions or comments or require additional information regarding this letter, please contact Paula Sisson of my staff at 843-727-4707 x 226.

Sincerely,

for Jay B. Herrington
Field Supervisor

JBH/PTS

cc:
Ms. Paige G. Koon, SCDNR, Columbia, SC
Mr. Will McDearman, RCW Recovery Coordinator, Jackson, MS