Clarks Hill Training Center
Integrated Natural Resources Management Plan
September 2022

South Carolina Military Department
and South Carolina Army National Guard

1 National Guard Road
Columbia, SC 29201

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UPDATED
INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN
CLARKS HILL TRAINING CENTER
SOUTH CAROLINA

SIGNATURE PAGES

This Integrated Natural Resources Management Plan (INRMP) is an update of the 2002-2006 Clarks Hill Training Center (CHTC) INRMP that has been reviewed for operation and effect and recommended for update and continued implementation (in 2013 and again in 2019). It meets the requirements for INRMPs as specified in the Sikes Act, as amended (16 US Code [USC] §670a *et seq.*). It has set appropriate and adequate guidelines for conserving and protecting the natural resources of CHTC.

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EXECUTIVE SUMMARY

Clarks Hill Training Center (CHTC) is a National Guard training facility located in the Midlands region of South Carolina. While the primary purpose is military training, natural resources are managed for conservation and to support the military mission across the 871-acre site in McCormick County. The intent of the INRMP is to support the military mission at CHTC using scientifically-proven land management practices in compliance with relevant laws, regulations, and applicable state and federal guidance, while ensuring no net loss in the capability to support the military mission of the installation. The INRMP is based on an adaptive, ecosystem management approach and integrates natural resources management with the military mission and other stakeholders associated with CHTC.

An INRMP was first developed for CHTC in 2001, and a review for operation and effect for CHTC was completed in 2013. This updated INRMP is the result of a review for operation and effect done by the US Fish and Wildlife Service (USFWS), the South Carolina Army National Guard (SCARNG), and the South Carolina Department of Natural Resources (SCDNR). The review resulted in agreement to update and continue implementing the existing INRMP. No substantive changes were made to the management programs and philosophies or the goals, objectives, and implementation projects. An INRMP is required for CHTC by the Department of Defense (DoD) and Army National Guard Policy because the military training requires conservation measures to minimize impacts (e.g. erosion management, prescribed burning, invasive species control) and to provide conditions suitable for military training.

CHTC is located within the J. Strom Thurmond Project managed by the US Army Corps of Engineer and is along the shoreline of J. Strom Thurmond Lake. Due to the small size (871 acres), activities such as tracked vehicle maneuver and live fire weapons training are not allowed. The goals in the INRMP are supported by objectives, projects, and tasks to achieve these goals. Implementation tables are maintained in a database but summarized in Appendix C.

As required by National Environmental Policy Act (NEPA), an Environmental Assessment (EA) was completed in conjunction with the 2001 INRMP. The previously completed EA concluded with the issuance of a Finding of No Significant Impact (FNSI; signed in 2005) and found implementation to result in net positive effects by sustaining and enhancing the natural resources, while providing for no net loss in training lands and having no significant adverse environmental or socioeconomic impacts.

The updated INRMP reflects changes in current guidance on INRMP structure and recent data relating to natural resources, but there have been no substantive changes to the overall scope or priorities of natural resources management. Implementation of the updated INRMP will be a continuation of the Preferred Action Alternative identified in the EA for the 2001 INRMP. As such, the EA for the 2001 INRMP and the FNSI are valid for the updated INRMP and a new detailed NEPA analysis is not necessary. An Environmental Checklist and Record of Environmental Consideration (REC) have been included as Appendix I.

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1 INRMP OVERVIEW

1.1 PURPOSE AND SCOPE

The purpose of this updated Integrated Natural Resources Management Plan (INRMP) is to guide natural resources management at Clarks Hill Training Center (CHTC) for the South Carolina Army National Guard (SCARNG), based on the original INRMP approved in 2001. CHTC is located in McCormick County, South Carolina. The entire training center, including cantonment area, is licensed from the US Army Corps of Engineers (USACE) to the SCARNG and South Carolina Military Department (SCMD). It is located within the J. Strom Thurmond Project (STP) and along the shoreline of J. Strom Thurmond Lake. Due to the small size (871 acres), activities such as tracked vehicle maneuver and live fire weapons training are not allowed.

This INRMP is consistent with the *Sikes Act* (16 US Code [USC] § 670a et seq.), Army Regulation (AR) 200-1 *(Environmental Protection and Enhancement*), Department of Defense (DoD) Instruction 4715.03 (*Natural Resources Conservation Program*).

Goals and objectives provide the framework for the natural resource management programs. Goals reflect SCARNG's vision for managing CHTC's natural resources. Each goal is supported by objectives that identify a management initiative or action for achieving the stated goal. The objectives then drive the development of projects and tasks to achieve those objectives. The goals and objectives in this updated INRMP are a consolidation and continuation of the goals and objectives in the 2001 INRMP and the 2013 review for operation and effect for CHTC. The primary purpose of the CHTC INRMP is to:

a) Support the mission;
b) Ensure good stewardship; and
c) Enhance quality of life for Army Guard personnel, and the citizens of South Carolina.

1.2 AUTHORITY AND REGULATORY COMPLIANCE

The most relevant laws, regulations, and policies with respect to natural resources management at CHTC are listed below.

The **Sikes Act** (and the Sikes Act Improvement Act) requires an INRMP be written and implemented for all DoD installations having significant natural resources and developed cooperatively with USFWS and the state wildlife agency. **AR 200-1,** *Environmental Protection and Enhancement,* addresses the environmental responsibilities of all Army organizations and agencies and provides a framework for the Army Environmental Management System (EMS). This regulation provides guidance on when to develop and implement an INRMP and discusses associated coordination requirements.

The **National Environmental Policy Act** of 1969 (NEPA; 42 USC §4321 *et seq*.) requires that federal agencies consider potential environmental consequences of proposed actions. New INRMPs and major revisions of INRMPs require an Environmental Assessment (EA) to meet NEPA requirements per Army National Guard Environmental Branch (ARNG-ILE) Memorandum, 9 April 2012 and US Department of the

Army (DA) Memorandum, 25 May 2006. Minor updates and continued implementation of an existing INRMP do not require an EA or opportunity for public comment.

As required by NEPA and the policies described above, an EA was completed for the original 2001 INRMP to evaluate the impacts of the actions proposed in the plan on the "human environment" and the installation's natural resources. This updated INRMP is not expected to result in biophysical consequences materially different from those anticipated in the 2001 INRMP. Thus, a Record of Environmental Consideration (REC) were completed that tier off the EA for the 2001 INRMP. The Environmental Checklist describes the Proposed Action (update and continued implementation of the 2001 INRMP), confirms that the activities in the updated INRMP are addressed in the 2001 INRMP EA, identifies potential impacts to various environmental media, and concludes that a REC is the appropriate level of NEPA documentation. A copy of the REC is included in Appendix I.

CHTC is entirely licensed from the USACE. The CHTC INRMP is consistent with USACE policy and the MTC INRMP to ensure that all natural resources management is integrated with the SCARNG's military mission and that all personnel understand their roles and responsibilities.

1.3 RESPONSIBILITIES

Implementation of the INRMP at CHTC is a shared responsibility between multiple departments within the SCMD.

1.3.1 SCMD

The Adjutant General

The Adjutant General is responsible for the establishment of facilities engineering and environmental services for the state and its supported installations, including implementation and enforcement of this INRMP. All department heads and their subordinates will be charged with following the standards and guidelines outlined in the plan.

Environmental/ Conservation

The Conservation section is directly responsible to ensure that the INRMP is implemented, remains current and achieves the stated management goals. This includes coordination, tracking and funding. The Conservation section also is responsible for the writing and reporting of the Integrated Pest Management Plan (IPMP).

Training & Operations

The Training and Operation Section (G3) is responsible for ensuring the integration of training within the INRMP. They are also responsible for management of training assets across the installation. They are responsible for the maintenance of training assets in the training areas.

Facilities

The Construction & Facilities Management Office is responsible for the management and maintenance of all real property assets at CHTC. This includes, the Site Development Plan, Master Plans, and for the implementation of the IPMP. Facilities are responsible for the maintenance of real property, utilities, and roads at CHTC.

1.3.2 McCrady Training Center

McCrady Training Center (MTC) maintains a full-time Environmental Resource Staff that assists with natural resources management at CHTC. The staff includes the following positions:

- State Environmental Program Manager
- Conservation Manager
- Deputy Conservation Manager
- Natural Resource Manager
- Field Technician
- Geographic Information Systems Manager
- Compliance Technician

1.3.3 US Army Corps of Engineers

The USACE Savannah District conducts the following natural resources management activities.

- Forest Management
- Fire Management
- Wildlife Management
- Law Enforcement (Limited)
- Hunting and Fishing

The USACE also maintains a Memorandum of Agreement (MOA) with the USFWS concerning protected species surveys. In accordance with this MOA, a qualified biologist conducts an endangered species survey for any natural resource or land disturbing activity at CHTC. USACE is also the primary agency that assists CHTC personnel with wetland and stream issues and management.

1.3.4 Federal & State Agencies

Several agencies are involved with assisting CHTC with the management of their natural resources. We also work closely with other agencies and universities to implement the INRMP and meet our management goals (See Section 4.2). Listed below are our partners that provide direct assistance during INRMP review and/or implementation.

- US Fish & Wildlife Service (USFWS): The USFWS is a signatory agency to this INRMP and the Fort Jackson INRMP. USFWS cooperates with MTC on fish and wildlife management, threatened and endangered species management, fish stocking, and waterfowl management.
- South Carolina Department of Natural Resources (SCDNR): The SCDNR is the primary state agency that assists MTC personnel in natural resource management and fish and wildlife management.
- US Army Corps of Engineers: USACE supports several aspects of natural resources management at CHTC. USACE is also the primary agency that assists MTC personnel with wetland and stream issues and management.

1.4 Review and Revision Process

In accordance with the Sikes Act, DoDI 4715.03, and AR 200-1, there are two components to the INRMP review process. An annual review process occurs so all cooperating entities receive an update regarding what has been accomplished in the last year and what is planned for the next year. The review for

operation and effect (ROE) must occur at least every five years and is a more comprehensive review process involving the USFWS and SCDNR to determine whether the INRMP goals and objectives are being achieved and whether anything needs to be modified. If the natural resources management on CHTC changes significantly, a major revision to the INRMP may be required.

1.4.1 Conservation Tracker Database (C-Tracker)

After the Review for Operation and Effect in 2011 for the MTC INRMP, SCARNG determined that the two INRMPs were not truly "integrated" into the management program. The INRMPs were documents that sat on a shelf and were periodically referenced as needed. To solve this issue, SCARNG undertook an overhaul of the INRMPs and their day-to-day business practices. Part of this process also involved integrating all the programmatic elements for both MTC and CHTC.

To do this, we first built an Access database around our INRMP document structure, which is referred to as the C-Tracker. The C-Tracker has four primary functions. The first function is to store and track all of our INRMP goals, objectives, projects and tasks (See Appendix C).

The second function is to incorporate this information into our daily business practices. We do this by using the C-tracker to automatically number projects and generate our server file structure. Everything saved on the server must fit into this file structure. The result is that everything we do or work on is tied to a project within our INRMP. Each of these projects are also linked to an existing STEP project, which connects the project and associated tasks to a funding source.

The third function of the C-tracker is to track and manage the Conservation budget and procurement. All proposed procurement actions are entered into the C-Tracker. All procurements must be tied to an existing project within the INRMP. The system automatically generates a tracking number, creates a file structure on the server, and generates appropriate procurement request documents based on the procurement type. Using the C-Tracker to initiate our procurement has further integrated the INRMP into our daily business practices.

The fourth function of the C-tracker is reporting. We use it to generate our annual reports and the reports for our ROE and 5-year updates. Through the C-Tracker, we are able to generate multi-year reports to look at our program from a Goals and Objective level down to individual project reports that can track time, material, and procurements for individual tasks.

The C-Tracker was developed and implemented in-house, not contracted out. The C-Tracker has met its intended purpose; the INRMP is now solidly part of our day-to-day business practice and it is updated every time we initiate a procurement action or begin a new project.

1.4.2 Annual Review and Coordination

The INRMP is reviewed annually to ensure the achievement of mission goals, verify the implementation of projects, and establish any necessary new management requirements. The SCARNG Conservation Manager will communicate annually with USFWS, SCDNR, and internal stakeholders to review the previous year's INRMP implementation and discuss implementation of upcoming programs and projects. Coordination will be done through a meeting or by letter or email. The SCARNG Conservation Manager is responsible for ensuring that annual INRMP reviews are completed, tracked, and reported. A memorandum of record detailing the annual review will be prepared and appended in Appendix I.

As part of the annual review and as a function of the INRMP, SCARNG will specifically:

1. Invite feedback from USFWS and SCDNR on the effectiveness of the INRMP;
2. Document specific INRMP action accomplishments from the previous year and discuss upcoming projects and activities.

Natural resources data and program and project information are available to cooperating agencies. They may request to see project folders or to have a site visit to view natural resources projects in progress at any time.

1.4.3 Review for Operation and Effect

Not less than every five years, the INRMP will be reviewed for operation and effect by all cooperating agencies and internal stakeholders to determine if the INRMP is being implemented, if the goals and objectives are being met, and if natural resources management is achieving necessary outcomes. The result of the review for operation and effect is a determination to continue implementation of the existing INRMP with minor updates or to proceed with a revision. The review for operation and effect may be done as part of every annual review or as a separate, more in-depth process, depending upon the parties involved and their concerns. The conclusion of the review will be documented in a jointly executed memorandum, meeting minutes, or in some other way that reflects mutual agreement.

If minor updates are needed, they will be completed by SCARNG and reviewed and approved by all parties. If it is determined that major changes are needed (i.e., sufficient to trigger a full revision), all parties will provide input and an INRMP revision and associated NEPA review.

If a review of operation and effect concludes that an INRMP must be updated or revised, there is no set time to complete the updates or revision. The existing INRMP remains in effect until the updates or revision is complete and all concurrences are received. Revisions to the INRMP will go through a more detailed review process similar to development of the initial INRMP.

1.5 Integration with Other Plans

Integration is central to the CHTC INRMP. This integration takes two basic forms. The first is integration of key components of other plans into the INRMP. This is primarily accomplished through the use of the C-Tracker (described above). The second form of integration is to ensure that Natural Resources are considered in other plans and projects beyond the Conservation division (see Appendix H for a complete list). This is accomplished through the SCARNG Environmental Review program. All SCARNG projects are subject to Environmental Review Process at which time the potential effects on natural resources are evaluated.

Due to the relationship with the USACE on CHTC, there are other natural resources plans that have particular relevance to the management goals and objectives identified in the CHTC INRMP:

USACE Plans

- Aquatic Plant Management Plan
- J. Strom Thurmond Lake Master Plan

Clarks Hill Training Center/SCARNG

- Integrated Pest Management Plan

2 INSTALLATION OVERVIEW

2.1 GENERAL DESCRIPTION

CHTC is located in McCormick County in the western region of South Carolina (Figure 1 in Appendix B), including part of the shoreline of J. Strom Thurmond Lake. The licensed area comprises 871 acres within the boundaries of the Strom Thurmond Project (STP; https://www.sas.usace.army.mil/About/Divisions-and-Offices/Operations-Division/J-Strom-Thurmond-Dam-and-Lake/Natural-Resources/) managed by the USACE and is licensed by the SCARNG. Clarks Hill is approximately 12 miles south of the community of Plum Branch and 20 miles north of Augusta, Georgia. CHTC is on a peninsula that extends into the Savannah River above the Strom Thurmond Dam near the border with Georgia.

CHTC is located approximately 4 miles south of Plum Branch SC on US 221 S. The installation is bounded on the north east side by State Rd 33-68. The north west side is bounded by an un-named dirt road leading to Luther Point. The rest of CHTC is bounded by Lake Thurmond. The land surrounding CHTC is comprised of private home sites on 1+ acre parcels, and by an infrequently used church summer camp at Luther Point.

The SCARNG has two licenses from the USACE that include the improved/cantonment area (330.22 acres) and the limited maneuver area (541 acres). The license for the improved/cantonment area expires in 2032 (License # DACW21-3-07-5231). The license for the limited maneuver area expires in 2022 (License # DACW21-3-17-0018).

2.2 HISTORY

The USACE purchased the land that is now occupied by CHTC in the 1950's. The SCARNG obtained two licenses from the USACE that include the improved/cantonment area and the limited maneuver area starting in 1972. The first construction on the site began in 1979.

The multipurpose dam and reservoir project (flood control and power generation) for area around CHTC, which is called the Strom Thurmond Reservoir, was not authorized until 1944. Construction of the dam began in 1946 but not completed until 1954. Recreation and fish and wildlife management were added as project purposes in the 1950s. These purposes also led to agreements with SCDNR for state managed recreation and hunting areas. (USACE website 2019; *History of the Savannah District, 1829-1989* by HE Barber and AR Gann 1989.)

2.3 MILITARY MISSION

The mission of CHTC is to "...contribute to the national defense of the US by providing training, education, and maintenance opportunities to individual Soldiers, staffs, and units, while protecting personnel, the facilities, and the environment....." CHTC serves as an outpost base for the MTC, which is the primary training area for the SCARNG.

The SCARNG is committed to both South Carolina state and federal missions. When called by the Governor, the South Carolina state mission supports civil authorities in the protection of life and property and the preservation of peace, order, and public safety. When called by the President in times of war and national emergency, the federal mission provides trained and equipped personnel and units capable of rapid deployment.

CHTC is primarily used for its excellent facilities for meetings and conferences and for confidence and team building using outdoor obstacle course stations. CHTC also provides military field training exercises for up to company-size units. Because of the relatively small size of the training area, maneuver training is limited and not encouraged.

Active Component military units also use CHTC and both active military units and SCARNG units will continue to use CHTC in the foreseeable future.

2.4 CURRENT LAND USE

CHTC occupies 871 acres within the Piedmont Region of McCormick County. The training facilities can be characterized by two categories: 1) the developed or improved grounds (50 acres), with buildings in a park like setting intermixed within forest vegetation typical of the area, and 2) the undeveloped area (821 acres) outside of the developed area proper. CHTC has as small cantonment area, with only 45 structures within the developed area. This includes a mix of administrative buildings, like headquarters, maintenance shops and storage sheds; billeting buildings, like cabins and barracks; structures used for training & mission support; dining facilities; helipad and multi-purpose class and conference buildings; and structures to support recreation like boat docks and camping pads.

CHTC supports both class room training and tactical exercises. The tactical training that occurs at CHTC is general low impact. Vehicular traffic is limited to existing roads. CHTS hosts the majority of the SCARNG's multi-role bridge training. The site is also frequently used for communications training and the establishment of command posts. While there are no helicopter landing or drop zones within the undeveloped areas, helicopters are occasionally used within the MOUNT site for tactical insertion and extraction. Munitions are not stored on CHTC and there are no impact areas.

Recreational activities occur both within the developed area and the restricted use area. This includes fishing and hunting. Fishing is the most frequently engaged in recreational activity. The restricted use area is open to the public. Activities within the developed area are restricted to users and guests at CHTC.

The South Carolina National Guard has deployed more than 25,000 service members since Sept. 11, 2001 in support of Operations Nobel Eagle, Iraqi Freedom, New Dawn, Enduring Freedom, Freedom's Sentinel, Inherent Resolve, Spartan Shield, Kosovo Force, and the European Deterrence Initiative, as well as other contingency training and mobilizations in support of combatant commands US Africa Command, US Central Command, US European Command, US Northern Command, US Southern Command, US Pacific Command, and US Cyber Command.

CHTS Soldier-Days Trained
(provided by Range Control)

Component	FY 19	FY 20 (as of 07/13/20)
Active Component	5,512	2,015
National Guard/Reserve	17,708	7,611
Non-DOD	2,101	168
Totals	**25,321**	**9,794**

Deployment/Federal Mission: The South Carolina National Guard has deployed more than 25,000 Soldiers and Airmen in support of overseas contingency operations since September 11, 2001. As of February 2019, approximately 300 service members are mobilized in support of homeland defense and overseas missions, including rotational support of the National Capital Region and ongoing support along the Southwest Border:

- In June 2018, nearly 300 South Carolina National Guard Airmen and a dozen F-16 fighter jets deployed under the 407th Air Expeditionary Group in Southwest Asia in support of an Air Expeditionary Force rotation
- In July 2018, South Carolina National Guard Security Forces Squadron Airmen returned home from a six-month deployment to Southwest Asia
- Approximately 90 Soldiers with the 125th Cyber Protection Battalion mobilized March 2018 for a yearlong deployment to the National Capital Region under operational control of US Army Cyber Command
- Six Soldiers with 2nd Battalion, 641st Aviation Regiment mobilized November 2018 for a nine-month deployment to Afghanistan in support of Operation Freedom's Sentinel
- More than 40 Soldiers with the 678th Air Defense Artillery Brigade mobilized January 2019 for a yearlong deployment to the National Capital Region in support of Operation Noble Eagle
- Approximately 140 Soldiers with the 1221st Engineer Clearance Company mobilized January 2019 for a nine-month deployment in support of Operation Inherent Resolve
- The South Carolina National Guard provides continued support to the Southwest Border under Operation Guardian Support. Currently, approximately 15 Soldiers are mobilized to provide personnel and aviation assets in support of the Department of Homeland Security
- In September, 2019 the SCNG responded to Hurricane Dorian with more than 1,600 Soldiers and Airmen providing support to civil authorities in preparation, during, and in the aftermath of the storm. The Soldiers and Airmen provided evacuation and security support, transportation and communication assets, and provided debris clearing support.
- In Fiscal Year (FY) 2020, the South Carolina National Guard is expected to mobilize more than 1,000 service members in support of homeland defense and overseas missions. Projected deployments include aviation support to the Kosovo Force; sustainment, signal, and combined arms support to Operation Spartan Shield; engineer support to Operation Inherent Resolve and the European Deterrence Initiative; aviation medevac support to Operation Freedom's Sentinel; engineer and personnel support to Eager Lion in Jordan; as well as continued air defense

artillery rotational support of the National Capital Region and ongoing aviation support along the Southwest Border
- Sixteen Soldiers in the South Carolina National Guard have paid the ultimate price in support of combat operations since September 11, 2001

State Emergency and Management Assistance Compact mission support (SCEMD Fact Sheet Feb 2019):
- The SCEMD serves as the primary point of contact, signatory, and coordinating element for the mission
- The South Carolina Air National Guard sent a contingent of support personnel to assist in command and control for Tyndall Air Force Base after Hurricane Michael, a category 4 hurricane, devastated the pan handle of Florida after making landfall Oct. 10, 2018
- At the peak of operations, more than 3,400 South Carolina National Guard Soldiers, Airmen, state employees, and members were mobilized to assist South Carolina after Hurricane Florence made landfall Sept. 14, 2018. While Hurricane Florence had grown to a category 4 storm, the winds rated it as a category 1 when it came ashore in the southern portion of North Carolina. The slow speed of the storm brought trillions of gallons of rain to the Carolinas and caused devastating flooding in the Pee Dee region of South Carolina. Response missions included assisting with coastal evacuations, engineer support of infrastructure to include sandbag operations and aqua barriers along main coastal routes. Post-storm missions included high water evacuations, aerial reconnaissance, and road repairs
- In May 2018, SCEMD deployed two mitigation specialists in response to severe flooding in Hawaii to assist in planning and developing mitigation actions and projects
- The South Carolina National Guard responded to snow and ice that impacted York County area and Rock Hill Jan. 17, 2018 sending two Vehicle Recovery Teams (VRTs) to assist the South Carolina Highway Patrol
- The South Carolina National Guard responded to snow and ice that impacted the low country of the state, Jan. 3, 2018. Soldiers activated for three VRTs with support personnel and liaison. VRTs performed 6 missions in support of South Carolina Highway Patrol. They recovered a total of 6 vehicles at mile markers 8, 18 and 57 on I-95
- 169th Fighter Wing supported the Aerospace Control Alert mission; defends east coast air space in support of North American Aerospace Defense Command
- In September, 2019 the SCNG responded to Hurricane Dorian with more than 1,600 Soldiers and Airmen providing support to civil authorities in preparation, during, and in the aftermath of the storm. The Soldiers and Airmen provided evacuation and security support, transportation and communication assets, and provided debris clearing support.

2.5 Regional Land Use and Regional Planning

2.5.1 Regional Land Use

CHTC is bounded by public lands and water that are owned by the USACE. These areas are managed for public recreational use (i.e., hunting, fishing, water sports, etc.). Land to the north of CHTC is a quasi-public lease area. Small farms (5-15 acres) and private timber lands occupy the surrounding private lands. The Strom Thurmond Project Master Plan (USACE, currently being updated) forms the backbone of regional planning since it encompasses much of the surrounding land.

2.5.2 State Wildlife Action Plan

Every military installation should evaluate and incorporate any applicable information from the State Wildlife Action Plan (SWAP) into their natural resources management plans and agreements (per DoDI 4715.03). Every state has one of these comprehensive plans that address species that have been determined to have the greatest conservation need. SWAPs serve as a framework for management of wildlife habitat, especially for those species that are in decline. During the INRMP update process, the SCARNG consulted the South Carolina SWAP (SCDNR 2015) to ensure INRMP goals, objectives and strategies are consistent with South Carolina's overall statewide and site-specific plans. The South Carolina SWAP is available at http://dnr.sc.gov/swap/index.html.

The South Carolina SWAP provides guidance for addressing limiting factors that negatively impact the species of greatest conservation need, or "priority species". The SWAP also includes strategies and tools that can be implemented by SCDNR and its partners and is intended to be a cooperative and proactive management plan that emphasizes partnerships in maintaining wildlife and plant resources. There are nine Conservation Action Areas (CAAs) identified in the 2015 SWAP, and these CAAs affect all priority species. CHTC shares many overlapping conservation actions with these CCAs, as can be seen in **Table 1**.

Table 1. South Carolina SWAP Conservation Action Areas and CHTC INRMP Management Areas

Conservation Action Areas (CAAs)	CHTC Management Areas	INRMP Section
Education and Outreach	Outreach, Awareness, and Education	3.3
Habitat Protection	Fish and Wildlife & Threatened, endangered and Special Status Species	3.9 & 3.10
Invasive and Non-Native Species Control	Pests	3.11
Private Land Cooperation	-	-
Public Land Management	Entire INRMP	-
Regulatory Actions	Authority and Regulatory Compliance	1.2
Survey and Research Needs	Various Natural Resource Management Topics	Chapter 3
Urban and Developing Lands	Regional Land Use and Regional Opportunities & Climate Change and Regional Growth	2.5.1 & 3.12
Climate Change (added in 2013)	Climate Change and Regional Growth	3.12

Source: SCDNR 2015

CHTC lies in the Carolina Slate Belt Ecoregion (USEPA Ecoregion IV) near the border with Georgia on the shoreline of Strom Thurmond Lake. CHTC is situated within USACE lands and management generally is aligned with that of the USACE and the Strom Thurmond Project Forest management recommendations.

Two relatively new pressures that South Carolina is grappling with as a state, and shared by CHTC, are encroachment caused by regional growth and climate change (**Section 3.12**). CCA number 8 – Urban and Developing Lands – is a concern across the state. CHTC lies on the shore of Lake Thurmond, a popular recreation area. CHTC is working with the USACE to help minimize encroachment impacts to the training mission. CHTC will also be working to develop other partnerships within the region to help minimize encroachment impacts. Climate change – CCA number 9 – will impact factors throughout South Carolina

such as drought, temperature extremes, severe weather, water quantity, and sea level rise. AT CHTC impacts could also include wildfire and fluctuating lake levels.

There are 493 animal species and 332 plant species listed as priority species in the SWAP. Several of these species have been documented on CHTC. For a complete list of priority species in South Carolina, refer to Chapter 2 of the 2015 South Carolina SWAP. For a complete list of rare species documented on CHTC, see Appendix E.

2.6 CONSTRAINTS AND OPPORTUNITIES

Natural resources impose few constraints on the mission at CHTC. With the exception of occasional wet periods, climate conditions on CHTC are ideal for training. It is important to note that during wet periods, limitations on vehicle maneuvering may curtail training activities. Thunderstorms during summer months can also limit training activities. There are few wetland areas within CHTC to create any constraints, although there is significant lake shoreline. No federally threatened or endangered species are known to occur at CHTC.

2.7 ENVIRONMENT OVERVIEW

CHTS appears as a peninsula that extends west into Lake J. Strom Thurmond (Clarks Hill Lake) with numerous fingers extending from the central portion creating a series of recessed coves and water inlets. About 75% of CHTS is dominated by pine. Wetland and drainage sites support mixed hardwood or hardwood-pine sites. Because a majority of the CHTS licensed area is a peninsula, a high ratio of shoreline to land environment exists. Topography shows patterns of well-defined drainages with streams dissecting plateaus. Ridge tops tend to be narrow to broad with short slopes adjacent to major streams. The valley floors generally are narrow and only make up less than 10% of the land area in this region. Elevations above sea level range from ca, 317 to 432 feet (ca. 96 to 131 meters). (Map 1).

The predominant soil types at CHTS are sandy clays and sandy silts overlying porphyritic granite of the Georgeville silt loam, Herndon silt loam, Nason silt loam, and the Tatum silt loam series. Detailed descriptions of CHTS soils may be reviewed in the 1980 Soil Survey of Greenwood and McCormick Counties, South Carolina. Fieldwork conducted in 2006 indicates that there may be small pockets of Iredell soils near the upper portions of some ravines. Several plant species that usually grow only on basic, Iredell soils have been found at CHTS (Gaddy, 2006) (the “Dwarf Palmetto Glade” type is found on such soils). White quartz is abundant in the upper soil layers at CHTS. Historically, it appears that some small boulders have been used as field stone for fences and fireplaces. Some sizeable boulders are found just off Lincoln Point Road.

The dominant vegetation of CHTS is forest. Gaddy (2006) listed the predominant vegetation types of Clarks Hill as:

1) **Pine;**
2) **Pine-Mixed Hardwoods;**
3) **Mixed Hardwoods-Pine;**
4) **Mixed Hardwoods;**
5) **Wetland Mixed Hardwoods;**
6) **Marsh; and**

7) Non-forested Uplands.

Most pine stands here are dominated by loblolly pine (*Pinus taeda*) with shortleaf pine (*Pinus echinata*) also found in the canopy. Mixed hardwood species common at CHTS include water oak (*Quercus nigra*), white oak (*Quercus alba*), red oak (*Quercus rubra*), black oak (*Quercus velutina*), southern red oak (*Quercus falcata*), Shumard oak (*Quercus shumardii*), tulip poplar (*Liriodendron tulipifera*), sweet gum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), and hickories (*Carya* spp.). Upland wet depressions are dominated by willow oak (*Quercus phellos*) and overcup oak (*Quercus lyrata*), along with sweet gum, American elm (*Ulmus americana*), and scattered green ash (*Fraxinus pennsylvanica*). Several small non-forested littoral marsh areas are found along the margins of Lake Thurmond where shorelines periodically fluctuate. Finally, non-forested upland areas include parking lots, road beds, athletic fields, drill fields, and wildlife openings (see Gaddy, 2006 for a complete discussion of CHTS vegetation).

The physical environment at CHTC is summarized in more detail Appendix F, while the biological environment is summarized in Appendix G. Rare, threatened, and endangered species at MTC are summarized in Appendix E; there are currently no known federally listed species on CHTC.

3 NATURAL RESOURCES MANAGEMENT

This section summarizes each technical area of natural resources management. In each section, relevant management recommendations, objectives, policies, and actions are presented. The main issues and concerns pertaining to natural resources management on CHTC include managing for the various state-listed species, control of invasive species, and soil erosion. A complete summary of all relevant laws, regulations, executive orders and policies is provided in Appendix J.

The goals and objectives in this updated INRMP are a continuation of the goals and objectives in the 2001 INRMP, with some minor updating of language and the addition of success criteria. These goals and objectives are achieved by undertaking projects and tasks, which are summarized in the Implementation Tables in Appendix C. These supporting actions can include in-house actions undertaken by SCARNG staff or larger actions working with other state and federal partners like USACE or SCDNR, working with universities, or working with NGO's. Other actions may be completed by working with vendors through the state contracting procedures. In addition, actions can be performed using non-DoD funds or by volunteers.

The following sections are not included in this INRMP because they do not apply to CHTC:

- Bird/Wildlife Aircraft Strike Hazard (BASH) – There is no BASH program at CHTC.
- Coastal/Marine Management – There is no coastal or marine habitat at CHTC.

USACE conducts all forest management activities, including timber sale planning, harvesting, reforestation, and fire management. Rules and regulations for hunting and fishing are managed by SCDNR. There are no agricultural leases or grazing on CHTC.

3.1 PROGRAM MANAGEMENT

Program management captures those elements that arch across the entire Conservation Program at CHTC, not just for one resource topic. Consistency and coordination are essential to maximize project benefit, and programmatic success. The C-Tracker is a critical part of the program management.

Guidelines for Program Management

- Managing the ecosystem to maintain biological diversity.
- Improving the quality of wildlife habitat for game and nongame species.
- Providing special protection and management leading to endangered species recovery as identified.
- Restoring damaged training areas and maintaining training areas for optimum use.
- Cooperating with USACE in meeting their objectives in forest management activities and endangered species management.

GOAL: OUR GOAL IS TO BE A PROACTIVE PROGRAM THAT ANTICIPATES AND MEETS THE NEEDS OF THE NATIONAL GUARD. WE STRIVE TO BE A NATIONAL LEADER IN EFFICIENCY, INNOVATION AND DIVERSITY, WHILE PROVIDING OUR STAFF AN ENVIRONMENT THAT EMPOWERS AND SUPPORTS THEIR CREATIVITY AND INITIATIVE.

SUCCESS CRITERIA

- **Green:** Maintain staffing levels above 80% of manning model, maintain above a 95% obligation rate, and maintain database and tracking systems.
- **Amber**: Maintain staffing levels above 60% of manning model, maintain above a 60% obligation rate, and maintain database and tracking systems.
- **Red**: Maintain staffing levels below 60% of manning model, obligation rate below 60%, and failure to maintain database and tracking systems.

OBJECTIVE 1. FACILITATE PROGRAM IMPLEMENTATION THROUGH THE USE OF SEASONAL STAFF

The Columbia Metro Area has a large population of students seeking under-graduate and post graduate degrees in conservation related fields. This provides us with a unique opportunity to supplement our staff to work on seasonal projects.

SUCCESS CRITERIA

- **Green**: Have hiring plans and announcement paperwork completed before March. Have candidates hired by May 16th
- **Amber**: Have hiring plans and announcement paperwork completed after March. Have candidates hired after May 16th
- **Red**: Needed seasonal staff, but not hired

OBJECTIVE 2. ENSURE THAT ALL PLANNING DOCUMENTS ARE RELEVANT & CURRENT

Keep all planning documents current through annual reviews, and updates. This project also includes document revisions, and other administrative tasks to improve document management and document relevance in day to day business practices.

SUCCESS CRITERIA

- **Green:** 100-90% of documents filed and archived
- **Amber*:*** 80-90 of documents filed and archived
- **Red:** <80% of documents filed and archived

OBJECTIVE 3. MAINTAIN CURRENT AND ACCURATE SPECIES LISTS

The purpose of this objective is to have an accurate species information that is both current and in easily accessible and usable format. In the past individual surveys were in different formats and stored in in multiple locations making it difficult to access the information. Our species data has been transferred to central species tracking database. This database contains both individual occurrences recorded from Planning Level Surveys, and general presence/ absence for each of our installations. This includes both verified records and potential occurrences.

SUCCESS CRITERIA

- **Green:** 100-90% up time availability of database. New data entered within 90 days of survey completion
- **Amber:** 89-75% up time availability of database. New data entered within 180 days of survey completion
- **Red:** <75% up time availability of database. New data entered within >180 days of survey completion.

OBJECTIVE 4. MAINTAIN EASY AND UP TO DATE ACCESS TO ALL RELEVANT DOCUMENTS

Maintain easy and up to date access to all records, surveys, reports, reviews and other relevant documents. This is accomplished through the use of both a document tracking database and our file management system.

SUCCESS CRITERIA

- **Green:** 100-90% up time availability of Servers. New documents entered within 90 days of survey completion
- **Amber*:*** 89-75% up time availability of Servers. New documents entered within 180 days of survey completion
- **Red:** <75% up time availability of Servers. New documents entered within >180 days of survey completion.

OBJECTIVE 5. CONTRIBUTE TO THE NATIONAL GUARD ENVIRONMENTAL PROGRAM AT A NATIONAL LEVEL

The success of the local Environmental Program is directly linked to the success of the National Program. To facilitate that success, SCARNG Conservation staff will participate in committees, review policy documents and reports, and provide general feedback and support to National Guard Bureau (NGB) to facilitate a strong overall environmental program.

SUCCESS CRITERIA

- **Green**: All actions are recorded and tracked
- **Amber**: 50%-99% of actions are recorded and tracked
- **Red**: <50% of actions are recorded and tracked

OBJECTIVE 6. ENSURE FISCAL SUSTAINABILITY FOR THE CONSERVATION PROGRAM

In order for the SCARNG Conservation Program to be successful, it requires sound and sustainable fiscal management. This includes programming out year requirements, managing budgets and tracking procurements.

SUCCESS CRITERIA

A consistently funded program that maintains an obligation rate above 95%, while maintaining 100% compliance with fiscal law and best management practices (BMPs).

- **Green*:*** 100-95% Obligation Rate
- **Amber*:*** 94-60% Obligation Rate
- **Red:** <60% Obligation Rate

OBJECTIVE 7. TO EMPLOY A STAFF OF SUBJECT MATTER EXPERTS THAT ARE INNOVATIVE LEADERS AND CURRENT IN THEIR FIELD

To employ a staff of subject matter experts that are innovative leaders and current in their field. That are able to use their knowledge and experience to implement program management plans and support the mission of the SCARNG.

SUCCESS CRITERIA

Each staff member attends at least one refresher training per year and one training session that expands their current knowledge base. They also teach or present at least one class, seminar, or event each year.

- **Green**: 100-75% of Full Time Staff Meets Both Goals
- **Amber**: 74-50% of Full Time Staff Meets Only One of the Goals
- **Red**: <50% of the Full Time Staff Meets the Goals

OBJECTIVE 8. MAINTAIN STATE OF THE ART TECHNOLOGY

Conservation Management requires the analysis of complex and diverse systems. Understanding these systems is often a very data intensive undertaking that then require repackaging to communicate the information. As a result, Conservation projects often require and utilize the most current technology.

SUCCESS CRITERIA

This Success Criteria is based on the completion, implementation and maintenance of a 5-year automation plan with annual updates and the tracking of down days due to equipment failure or unavailable equipment.

- **Green**: Current and updated plans, and 100% - 75% equipment not more than 1 year past planned life
- **Amber**: Plans not updated or current, or >75% of equipment more than 1 year past planned life cycle
- **Red**: "Down Days" due to IT failure exceed 15%

OBJECTIVE 9. SUPPORT PROGRAM IMPLEMENTATION THROUGH PROVIDING STAFF THE TOOLS, EQUIPMENT, AND SUPPLIES NEEDED TO PERFORM THEIR DAY TO DAY WORK ACTIVITIES

In order to effectively perform their duties, the staff needs the proper supplies and equipment. This objective is to ensure that they are provided these materials.

SUCCESS CRITERIA

Properly supplied and equipped staff. Valid request are filled within 30 days of submission.

- **Green**: < 30 day turn around on procurement
- **Amber:** 31-60 day turn around on procurement
- **Red:** Over 60 Day Turn around on procurement

3.2 GIS (CONSERVATION)

The Conservation Geographic Information System (GIS) program maintains and updates GIS data related to natural and cultural resources, but it is shared with other groups within SCARNG and with USACE.

Guidelines for Conservation GIS

- Select suitable areas for specialized training exercises.
- Plan land rehabilitation projects.
- Provide special maps for Environmental Awareness materials.

- Ensure avoidance of cultural resources during ground disturbing projects.
- Ensure avoidance of rare species habitats and other areas of special concern during construction projects or training.
- Ensure avoidance or consideration of wetlands when planning construction projects.
- Monitor effects of wildfires and prescribed burning activities.
- Identify site options for use during NEPA evaluation of alternative sites.

GOAL: SUPPORT THE MISSION OF THE SOUTH CAROLINA MILITARY DEPARTMENT, AND SPECIFICALLY THE SCMD ENVIRONMENTAL DIVISION, THROUGH THE DEVELOPMENT AND MAINTENANCE OF AN INTEGRATED GIS PROGRAM.

SUCCESS CRITERIA

The use of GIS within the agency and specifically within the Environmental Section continues to increase and become an integrated part the SCMD business practices.

- **Green:** > 80% of the Environmental staff are fully aware of GIS and look to apply it when necessary/advantageous and the Environmental GIS program continues to expand
- **Amber:** 50-80% of the Environmental staff are aware of GIS and look to apply it when necessary/advantageous and the Environmental GIS program is sufficiently maintained
- **Red:** 0-49% of the Environmental staff are aware of GIS and look to apply it when necessary/advantageous and the Environmental GIS program regresses

OBJECTIVE 1: DEVELOP A DATA MAINTENANCE/UPDATE STRATEGY

The SCMD has an extensive collection of training and natural resources data. It is vital that a strategy is in place to continually update and maintain these holdings, keeping them as current and accurate as possible.

SUCCESS CRITERIA

It is vital that a strategy is in place to continually update and maintain these holdings, keeping them as current and accurate as possible.

- **Green:** 100% of vital data is updated annually or as determined necessary
- **Amber:** 80-99% of vital data is updated annually or as determined necessary
- **Red:** A detailed data maintenance plan fails to be implemented and vital data is arbitrarily updated

OBJECTIVE 2. GIS MODEL CREATION

The power of GIS comes from its ability to analyze increasingly diverse and complicated datasets through a spatial lens. This requires state of the art computer systems and software. As with all IT programs the speed of change is high, and the risk of obsolescence is even higher. To mitigate these risks and costs the GIS infrastructure must be updated and maintained in a planned and systemic fashion.

SUCCESS CRITERIA

This Success Criteria is based on the completion, implementation and maintenance of a GIS Infrastructure plan for hardware and software.

- **Green:** A detailed hardware/software maintenance plan is implemented and 100% of vital hardware/software is updated as determined necessary
- **Amber:** A detailed hardware/software maintenance plan is implemented and 80-99% of vital hardware/software is updated as determined necessary
- **Red:** A detailed hardware/software maintenance plan fails to be implemented and vital hardware/software is arbitrarily updated

OBJECTIVE 3. PROVIDE SPATIAL ANALYSIS, DATA CREATION, AND GIS SERVICES FOR DECISION-MAKING

The power of GIS comes from its ability to analyze diverse and complicated datasets through a spatial lens. This analysis then enables decision makers to make more an informed choice. Improved analytical capability increases our return on our GIS investment.

SUCCESS CRITERIA

The continued integration and improvement of data creation and analysis through models, web applications, or other GIS services within the Environmental department business practice.

- **Green:** Remain fully staffed and provide timely data analysis, data creation, and GIS services for Environmental staff
- **Amber:** Remain reasonably staffed and provide timely data analysis, data creation, and GIS services for Environmental staff when possible
- **Red:** Consistently under-staffed and fail to provide timely data analysis, data creation, and GIS services for Environmental staff

OBJECTIVE 4. EXPLORE/RESEARCH NEW GIS TECHNOLOGIES AND PROMOTE GIS CAPABILITIES

GIS is a quickly expanding technology that requires a knowledge of geography, computer programing, data management, web development, IT infrastructure, graphic design, and a passing knowledge of the fields your end-users plan to use the GIS system to analyze. To meet these needs and keep the program relevant staff members must be subject matter experts that are innovative leaders and current in their field. They must use their knowledge and experience to implement program management plans and support the mission of the SCARNG.

SUCCESS CRITERIA

Attend conferences, webinars, pertinent GIS classes, and research new or improved techniques to expand the Environmental GIS program and promote new capabilities within the department.

- **Green:** Continuously advance and promote Environmental GIS capabilities through attending conferences, webinars, and classes or researching various knowledge bases
- **Amber**: Periodically advance and promote Environmental GIS capabilities through attending conferences, webinars, and classes or researching various knowledge bases
- **Red:** Fail to advance and promote Environmental GIS capabilities

3.3 OUTREACH, AWARENESS AND EDUCATION

The Outreach, Awareness, and Education program has both an internal (military/SCARNG) audience and an external (public) audience. The internal training is primarily conducted through our State-Wide Environmental Compliance Officer/NCO Course.

Opportunities to provide outreach and environmental education to the public not only helps inform interested parties about what the SCARNG is doing as good stewards of the land, but also helps educate the public about issues in their 'backyard' and can create a network of people who support the National Guard and its Mission.

Guidelines for Environmental Awareness

- Make available and easily accessible all Environmental Awareness material to military personnel and interested public.
- Design and produce material professionally.
- Post material on endangered species and sensitive habitats where appropriate.
- When requested, make staff available to interested military personnel, organizations, and the public who are in need of natural resources information.
- Train staff to provide excellent customer service skills.

GOAL: PROTECT THE TRAINING MISSION OF THE SOUTH CAROLINA ARMY NATIONAL GUARD BY FOSTERING A PUBLIC UNDERSTANDING OF CONSERVATION STEWARDSHIP ON MTC AND THE CRITICAL NATURE OF THE SCARNG MISSION.

SUCCESS CRITERIA

An active program that is proactively engaging the targeted audiences.

- **Green**: 100% Entry of Engagements/Outreach Events into Tracking System
- **Amber**: 50%-99% Entry of Engagements/Outreach Events into Tracking System
- **Red**: < 50% Entry of Engagements/Outreach Events into Tracking System

OBJECTIVE 1. RAISE COMMUNITY AWARENESS.

In order to maintain the current favorable opinion that the public holds for the military mission, the SCARNG needs to actively work to inform the public of our efforts to maintain the resources that have been entrusted to us.

SUCCESS CRITERIA

To meet this Objective, SCARNG needs to consistently record/track all Outreach Activities. After 5 years of tracking, the data should be analyzed to refine this success criteria to focus more on the number and quality of the Outreach Activity.

- **Green:** All outreach efforts are recorded and tracked
- **Amber:** 50%-99% of outreach efforts are recorded and tracked
- **Red:** < 50% of outreach efforts are recorded and tracked

OBJECTIVE 2. CONTINUE EDUCATION AND TRAINING PROGRAM

Continue the implementation of the State-Wide Environmental Education & Training program.

SUCCESS CRITERIA

- **Green:** Completion of 4 State-Wide Environmental Education & Training Classes.
- **Amber:** Completion 2-3 State-Wide Environmental Education & Training Classes.
- **Red:** Completion 1 or less State-Wide Environmental Education & Training Classes.

3.4 SOIL AND WATER

The management of soil and water on CHTC is primarily a SCARNG responsibility and is driven by compliance with various laws and regulations, but also to prevent erosion and loss of soil that would impede training.

Guidelines for Protecting Soil and Water Resources

- Manage erosion control in accordance with several plans and permits including the SWPPP, SUPs, USFS Soil and Water Conservation Handbook, and State BMPs.
- Use the specific guidance for selecting BMPs as provided by state sources, such as Construction Site BMP Manuals, and other proven techniques.
- Ensure incorporation of BMPs in the preliminary engineering, design, and construction of facilities involving ground disturbance.
- Prevent or minimize erosion to the maximum extent possible.
- Use native plants for erosion control where possible.

GOAL: TO MAINTAIN TRAINING LANDS WHILE PROTECTING AND ENHANCING SOIL AND WATER QUALITY AND ENSURING COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.

SUCCESS CRITERIA

Acres of training lands excluded from use due to erosion or water quality issues, and numbers of regulatory enforcement actions. Acres data will be derived from RFMSS and ITAM data while enforcement data derived from SCARNG compliance records.

- **Green:** 0-5% total acreage excluded from training (temporarily) and zero enforcement actions
- **Amber:** < 5% of total acreage excluded from training (temporarily) or 1 enforcement action
- **Red:** > 5% total acreage excluded from training (temporarily), or more than 1 enforcement action

OBJECTIVE 1. DEVELOP A SYSTEMATIC APPROACH FOR SOIL AND WATER MANAGEMENT.

The three biggest obstacles to a successful Soil and Water Management program are: communication, coordination, and resourcing (funding). The intent of this objective is to provide a structured system to facilitate coordination and communication. This in turn would allow for more targeted use of available resources. The intent is to hold a quarterly meeting between all stakeholders (Facilities Management Office, Training/ ITAM, Natural Resources and pertinent Training Center Staff). The 1st and 4th Quarter meeting would focus on review of completed work, identification and prioritization of work still needed, and the development of available budget and resourcing to execute the work. The 2nd and 3rd Quarter meeting would be to track on going work and note any problems or changes in the execution plan.

SUCCESS CRITERIA

- **Green:** All four meetings were conducted, with overall attendance from 2/3rds of the interested parties.
- **Amber:** 2-3 Meetings were conducted, or less than 2/3rds of the interested parties attended the meetings
- **Red:** 1 meeting or less was held, less than 1/3rd of the interested parties attended.

OBJECTIVE 2. REPAIR IDENTIFIED EROSION SITES.

The purpose of this objective is to implement the Soil Management Implementation Plan & Inventory (SMPI) developed under Objective ID #6 in this database.

SUCCESS CRITERIA

- **Green:** 100%-75% Execution of the yearly plans developed during the SMPI Coordination Meeting.
- **Amber:** 74%-50% Execution of the yearly plans developed during the SMPI Coordination Meeting.
- **Red:** < 50% Execution of the yearly plans developed during the SMPI Coordination Meeting, or no execution plan is developed.

OBJECTIVE 3. EROSION REPAIR SITE MONITORING & EVALUATION.

The intent of this objective is to determine if the activities in Section 3.4, Objective 2 produce the desired results. Monitoring and project evaluation helps:

- identify what works, what did not work, and what should continue
- improves actions where they are less effective
- change actions if they are ineffective

SUCCESS CRITERIA

- **Green:** 100%-75% of repaired site are evaluated and documented annually
- **Amber:** 74% - 50% of repaired site are evaluated and documented annually
- **Red:** <50% of repaired site are evaluated and documented annually

3.5 WETLANDS

There are approximately 4.37 acres of wetlands on CHTC, which are mostly riparian wetlands found in stream channels and their floodplains and lacustrine wetlands along the edges of Lake Strom Thurmond. A small percentage of wetlands on CHTC are comprised of upland depressions. SCARNG manages for wetlands by preventing impacts in these areas through soil management and ensuring proper compliance with Section 404 of the Clean Water Act. All activities must adhere to established buffer zones and caution areas unless otherwise stated in environmental documentation.

Guidelines for Wetland Management

- Follow applicable BMPs for all activities occurring in or near wetlands.
- Ensure activities adhere to established buffer zones and caution areas regulations.
- Do not apply pesticides directly to wetlands or open waters (follow all label restrictions and environmental documentation).

GOAL: A WETLANDS MANAGEMENT PROGRAM THAT PROTECTS AND ENHANCES ALL WETLAND SYSTEMS AND ENSURES COMPLIANCE WITH ALL APPLICABLE LAWS AND REGULATIONS.

SUCCESS CRITERIA

No net loss of wetland habitat, regulatory enforcement actions, training mission capability, or delays to projects.

- **Green:** No net loss of wetland habitat, regulatory enforcement actions, training mission capability, or delays to projects.
- **Amber**: No more than 1 regulatory enforcement action.
- **Red**: More than 1 regulatory enforcement action or any net loss of regulatory wetlands, training mission capability, or significant delays to projects.

OBJECTIVE 1: COLLECTION OF DATA TO SUPPORT PLANNING AND MONITORING INITIATIVES.

This objective supports the planning and check stages of our adaptive management strategy.

SUCCESS CRITERIA

The collection of a continuous data set that provides insight into the relative health of the wetland systems at MTC.

- **Green:** A complete and continues data set that easily accessible and used by resource managers and subject matter experts.
- **Amber**: Incomplete datasets, or dataset that are not curated, or checked for quality assurance & control, or dataset that are not readily accessible.
- **Red**: Nonexistent datasets, or datasets that are in such a state as to be unusable or irretrievable.

OBJECTIVE 2. SUSTAIN OR ENHANCE WETLAND SYSTEMS AT MTC & CHTC.

This objective addresses the action and the analysis phases of our adaptive management strategy. It focuses on implementing projects derived from our planning process and analyzing the success of the implemented projects.

SUCCESS CRITERIA

Success criteria based on the creation of wetland health report.

- **Green:** A complete and continues data set that easily accessible and used by resource managers and subject matter experts.
- **Amber**: Incomplete datasets, or dataset that are not curated, or checked for quality assurance & control, or dataset that are not readily accessible.
- **Red**: Nonexistent datasets, or datasets that are in such a state as to be unusable or irretrievable.

3.6 FOREST MANAGEMENT

The USACE forestry office is responsible for the administration of the forest management and the USACE Forester in charge of CHTC implements the timber management program. The revenue generated is treated the same as all forestry revenue on USACE, it is submitted to the US Army reimbursable forestry account. The Environmental Office of the SCARNG can only request changes in management practices. USACE forestry personnel coordinate their forest management activities with the SCARNG Environmental Office. While USACE has the primary role in all forest management on CHTC, SCARNG serves in a coordinating role in most instances and sometimes directly assists with management activities.

The harvest of forest product (pine timber) at the CHTC can result in marketable products from vegetation management for the purposes of maintaining wildlife habitat and forest health.

Guidelines for Forest Management on CHTC

- Use BMP's while conducting management activities.
- Improve forest health and reduce disease infestations.
- Maintain a vegetative cover to screen noise and provide needed cover for training.
- Provide and maintain forest cover for watershed and riparian areas.
- Maintain or enhance wildlife habitat unique to CHTC and USACE.
- Maintain a healthy forest ecosystem.
- Enhance the military training environment.
- Conserve Threatened and endangered species habitat.
- Prevent soil erosion and maintaining sufficient ground cover properties to protect and preserve water quality.

GOAL: A FOREST THAT SUPPORTS THE MILITARY MISSION AND MAINTAINS ECOSYSTEM INTEGRITY. THIS IS A FOREST THAT IS CHARACTERIZED BY HIGH HABITAT DIVERSITY AND MANAGED FOR TARGETED TRAINING OPPORTUNITIES. TARGETED TRAINING OPPORTUNITIES REFERS TO MATCHING TRAINING MISSIONS TO LAND MANAGEMENT PRACTICES.

SUCCESS CRITERIA

No net loss of opportunities, and no overall degradation of the ecosystem health.

- **Green:** 90-100% project integration within the Conservation Tracker and periodic meetings with ITAM.
- **Amber**: 80-89% project integration within the Conservation Tracker and sporadic meetings with ITAM.
- **Red**: Less than 79% project integration within the Conservation Tracker and no meetings with ITAM.

OBJECTIVE 1. MAINTAIN OPEN FOREST MIDSTORY.

All historic accounts of longleaf pine forests described them as "open and park like" with a conspicuous lack of midstory trees and shrubs. They were also described with a high diversity plant in the ground layer. This sub-climax condition is the result of a well-established fire regime.

This open park-like condition is beneficial to both the training community and the overall health of the eco-system. The intent of this objective is to aid the wild land fire management program, to accelerate habitat restoration in targeted areas, and provide a more usable training space to meet the military mission.

SUCCESS CRITERIA

- **Green:** 100% development of a strategy for ensuring an open forest midstory.
- **Amber**: 1-99% development of a strategy for ensuring an open forest midstory.
- **Red**: No development of a strategy for ensuring an open forest midstory.

OBJECTIVE 2. LONG-TERM MONITORING OF VEGETATIVE COMMUNITIES.

Monitoring conditions and species composition of vegetative communities across SCARNG Training Centers.

SUCCESS CRITERIA

- **Green:** 75 -100% of vegetative communities monitoring completed for that FY.
- **Amber:** 50-74% of vegetative communities monitoring completed for that FY.
- **Red:** Less than 49% of vegetative communities monitoring completed for that FY.

3.7 WILDLAND FIRE

Wildland fire management includes all related activities dealing with fire suppression, fire prevention, and fire use. The goal at CHTC in cooperation with USACE is to provide a good use of fire management activities to meet mission goals while meeting natural resource objectives.

Fire is a natural part of the southern pine ecosystem. Fires redistribute nutrients, germinate certain seeds, and prevent the fuel build up. Suppression of fire has interrupted these natural functions and actually makes fires more catastrophic when they do occur (Biswell 1989). As used at CHTC, the term "prescribed burning" refers to burning for ecological/silvicultural purposes.

The USACE forestry office is responsible for the administration of wildland fire management at CHTC. While USACE has the primary role in all wildland fire management on CHTC, SCARNG serves in a coordinating role in most instances and sometimes directly assists with management activities.

Guidelines for Wildland Fire Management on CHTC

- When feasible, cooperate and assist USACE in fire prevention, detection, suppression, and prescribed and controlled fire.
- If feasible, identify and provide the staff, with the necessary fire training needed to cooperate with USACE.
- Require a level of physical fitness for staff engaged in fire management activities.
- Develop a cooperative fire protection agreement with USACE.

3.8 GROUNDS

This section contains objectives for both buildings and grounds maintenance, and new construction activities. The SCARNG has primary responsibility for grounds maintenance and construction on CHTC.

Guidelines for Grounds Maintenance

- Use regionally native plants for landscaping.
- Use construction practices that minimize adverse effects on the natural habitat.
- Reduce pollution by reducing the use of fertilizer and pesticides, using integrated pest management, recycling green waste, and minimizing runoff.
- Implement water-efficient practices.
- Minimize the use of fertilizers near water resources.

GOAL: TO MAINTAIN THE GROUNDS AT THE CLARKS HILL TRAINING CENTER IN A SAFE, ATTRACTIVE AND PROFESSIONAL STATE, WHILE INCORPORATING SUSTAINABILITY PRINCIPLES.

SUCCESS CRITERIA

No overall degradation of the ecosystem health and no red findings in the ISR.

- **Green:** 1 or less findings by the ISR.
- **Amber**: 2-4 Findings by the ISR.
- **Red**: More than 4 findings of the ISR.

OBJECTIVE 1. A SUSTAINABLE GROUNDS MAINTENANCE PROGRAM.

In accordance to the requirements in EO 13693: to establish a method for reducing water, energy, and vehicle fuel usages each FY via developing a comprehensive Sustainable Grounds Management Strategy.

SUCCESS CRITERIA

- **Green:** Completion of a Sustainable Grounds Management Strategy prior to the next ROE.
- **Amber**: 1-99% Completion of a Sustainable Grounds Management Strategy prior to the next ROE.
- **Red**: No comprehensive Sustainable Grounds Management Strategy prior to the next ROE completed.

3.9 FISH AND WILDLIFE

USACE is responsible for all maintenance/improvements of wildlife and fisheries habitat at CHTC. SCDNR is responsible for the enforcement of all fishing and hunting laws. Through working with the USACE, the SCARNG's primary objective of wildlife management on CHTC is to conserve and enhance indigenous wildlife populations and their associated habitat at optimum levels. Optimum levels are determined by considering such factors as statutory requirements and restrictions, military training needs, public health and safety, morale support needs (hunting, fishing and other outdoor recreation), aesthetics, public relations, and public trust/stewardship responsibilities.

Rare, threatened and endangered species management receives priority over all other forms of natural resources management. No federally threatened or endangered species are known to exist on CHTC at this time.

Currently, habitat quality and species diversity are high. CHTC is generally forested with large contiguous blocks of forest. It is important to note that connectivity areas should be maintained to support species diversity and avoid habitat fragmentation.

Guidelines for Fish and Wildlife Management

- Maintain habitat connectivity and management consistency with contiguous areas outside the installation, particularly for riparian zones and ridgelines.
- Maintain or enhance species biodiversity.
- Minimize habitat fragmentation within the training area.
- Provide long range and annual plans for fish and wildlife habitat, development and maintenance, especially habitat for potential T&E species.

- Optimize ecological development of land and water areas.
- Recommend fish and wildlife harvest designed to adjust fish and game populations to the capacity of the available habitat.
- Provide future recreational benefits from fish and wildlife resources.
- Manage landscape areas where few mature forests persist to retain late-succession patches.
- Provide for retention of any old-growth fragments that remain in watersheds.
- Allow salvage only for safety reasons along roads, near developed and recreation facilities, and to relieve the effects of catastrophic events such as fire, insects and diseases, should this occur.
- Protect habitat as appropriate for selected species dispersal from fragmentation.
- Use appropriate silvicultural techniques to match wildlife habitat needs.
- Create cooperative agreements and funding with USACE to implement these guidelines.

GOAL: CONSERVE AND ENHANCE WILDLIFE POPULATIONS AND THEIR ASSOCIATED HABITAT FOR OPTIMUM LEVELS OF BIODIVERSITY AND ECOSYSTEM HEALTH, WHILE MAINTAINING A REALISTIC TRAINING ENVIRONMENT.

SUCCESS CRITERIA

No overall degradation of the ecosystem health.

- **Green:** 0 to 1 NOV for habitat degradation.
- **Amber**: 2 to 4 NOV for habitat degradation.
- **Red**: > 4 NOV for habitat degradation.

OBJECTIVE 1. LONG-TERM MONITORING OF FISH AND WILDLIFE.

Initiate PLS and continue ongoing PLS to develop trend data of fish and wildlife.

SUCCESS CRITERIA

- **Green:** 76-100% of planned PLS completed.
- **Amber**: 50-75% of planned PLS completed.
- **Red**: 0-49% of planned PLS completed.

OBJECTIVE 2. MANAGE WILDLAND HABITAT TO PROMOTE SPECIES DIVERSITY.

Modification of existing wildland habitat to increase biodiversity of native flora and fauna.

SUCCESS CRITERIA

- **Green:** 76> 41 acres of modified habitat.
- **Amber**: 20-40 acres of modified habitat.
- **Red**: 0-14 acres of modified habitat.

3.10 THREATENED, ENDANGERED AND SPECIAL STATUS SPECIES

SCARNG takes the management and protection of Threatened, Endangered and Species of Concern very seriously. SCARNG strives to manage and protect both federal and state listed species, as well as special status species that have the potential to be listed in the future. Appendix E provides a description of all Threatened, Endangered and Species of Concern known or with potential to occur on CHTC, including species-specific management recommendations. Tables E-1 and E-2 summarize potential and documented species status animals and plants, respectively. At present, there are no federally listed

species documented on CHTC, although bald eagles (protected under the federal Bald and Golden Eagle Protection Act) occasionally use CHTC during migration.

Guidelines for T&E Management

- Coordinate with USACE on management activities.
- Comply with all applicable laws and regulations.
- Use prescribed fire to maintain or increase habitats as applicable.
- Provide USACE staff with military training schedules to prevent any conflicts that may interfere with wildlife activities designed to protect species and their habitat.

GOAL: CONSERVE AND ENHANCE THREATENED, ENDANGERED AND SPECIAL STATUS SPECIES (SSS) POPULATIONS AND THEIR ASSOCIATED HABITAT FOR OPTIMUM LEVELS OF BIODIVERSITY AND ECOSYSTEM HEALTH.

The goal of the Threatened, Endangered and Special Status Species program is to support the Military mission, while complying with all State and Federal Laws concerning these species.

SUCCESS CRITERIA

No net loss of training opportunities, and no overall degradation of the ecosystem health. No USFWS enforcement actions.

- **Green:** No net loss of training days/activities and no USFWS findings.
- **Amber**: Less than 2 days net loss of training and 1 USFWS finding.
- **Red**: Net loss of 2 or more days of training and more than 2 USFWS findings.

OBJECTIVE 1. THREATENED, ENDANGERED AND SPECIAL STATUS SPECIES HABITAT MANAGEMENT.

Maintain and/or modify existing habitat to increase biodiversity of Threatened, Endangered and Special Status Species.

SUCCESS CRITERIA

- **Green:** Maintain staffing levels above 80% of manning model, maintain above a 95% obligation rate, and maintain database and tracking systems.
- **Amber**: Net loss of 11-20% of Threatened, Endangered and Special Status Species habitat.
- **Red**: Net loss greater than 20% of Threatened, Endangered and Special Status Species habitat.

OBJECTIVE 2. THREATENED, ENDANGERED AND SPECIAL STATUS SPECIES MONITORING

Develop a protocol for Threatened, Endangered and Special Status Species monitoring, which will create a species list and monitoring period.

SUCCESS CRITERIA

- **Green:** 76 -100% of Threatened, Endangered and Special Status Species monitoring completed for that FY.
- **Amber**: 50-75% of Threatened, Endangered and Special Status Species monitoring completed for that FY.
- **Red**: Less than 49% of Threatened, Endangered and Special Status Species monitoring completed for that FY.

OBJECTIVE 3. THREATENED AND ENDANGERED ECOSYSTEM MANAGEMENT

Manage ecosystems level factors that support threatened and endangered (T&E) species population health and survivorship.

SUCCESS CRITERIA

- **Green:** Annual increase in T&E species populations.
- **Amber**: Annual Sustainment of T&E species populations.
- **Red**: Annual decrease in T&E species population.

3.11 PESTS

All pest management activities are performed in compliance with the Integrated Pest Management Plan (IPMP). This includes management of invasive plants and animals outside of the Cantonment Area and other buildings.

Guidelines for Pest Management

- Use only proven biological control methods whenever feasible and economical.
- Establish buffers zone adjacent to water resources.
- Apply no pest management procedures that are likely to have a negative impact on endangered, threatened or special status species, or their habitats.

GOAL: ENSURE COMPLIANCE WITH DOD INSTRUCTION 4150.07, "DOD PEST MANAGEMENT PROGRAM".

SUCCESS CRITERIA

Implementation of comprehensive pest management plan.

- **Green:** Yearly update of IPMP and subsequent reports within IPMP.
- **Amber**: N/A.
- **Red**: IPMP and subsequent reports within not updated annually.

OBJECTIVE 1. REDUCE IMPACTS TO TRAINING AND THE ENVIRONMENT FROM NUISANCE WILDLIFE.

SUCCESS CRITERIA

Reduce impacts from nuisance wildlife.

- **Green:** Successful removal of nuisance wildlife with no net loss of training days/ activities.
- **Amber**: Removal of nuisance wildlife with a net loss of less than 2 days of training.
- **Red**: Removal of nuisance wildlife with a net loss of 2 or more days of training.

OBJECTIVE 2. REDUCE THE QUANTITY OF PESTICIDES APPLIED.

This objective is intended to meet the Presidential Executive Order and the DOD Measure of Merit #2: to reduce the total amount of pesticide applied each year to federal military installments.

SUCCESS CRITERIA

Show reduction of annual pesticide use via tracking and analysis of pesticide application data.

- **Green:** Reduction in annual net pesticide use by 5% or more.
- **Amber**: Less than 2-4% reduction in annual net pesticide use.

- **Red**: Increase in annual net pesticide use.

OBJECTIVE 3. MANAGE INVASIVE/NOXIOUS PLANT SPECIES.

This objective is to develop a proactive program in accordance to EO 13112, to facilitate the management and control of Invasive/Noxious plants and animals. This program is managed as part of our IPMP. SCARNG will monitor both the overall health of the system as well as the success or failure of individual projects as part of this objective.

SUCCESS CRITERIA

Completion of a comprehensive Invasive strategy prior to the next ROE.

- **Green:** 100% completion of a comprehensive invasive species management strategy.
- **Amber**: 1-99% development of a comprehensive invasive species management strategy.
- **Red**: No development of a comprehensive invasive species management strategy.

3.12 RECREATION

The military mission of CHTC takes precedence over recreational activities. Recreational use of the developed area and facilities are available to active and retired military and civilian employees of the SCARNG (and their guests) provided the activities do not interfere with the military mission. In addition, the facilities are also available to other federal government employees conducting business or leisure activities. Per U.S. Army Corp of Engineers, hunting is open to the general public following SCDNR guidelines. However, SCARNG has the ability to close the licensed areas to hunting when training and/or maintenance of property is occurring.

Except for hunting, CHTC is not accessible to civilians for any purpose other than as deemed necessary by the installation leadership. However, plans are being considered to allow more public access for recreation activities such as fishing, hiking, and interpretive trails. In accordance with Title 16, U.S. Code, Section 670a, CHTC is obligated to seek cooperative plans between USACE, SCDNR and other agencies to allow public access. Under the American Indian Religious Freedom Act of 1978, CHTC allows access to American Indians.

Guidelines for Recreation on CHTC

- Cooperate with USACE to meet their recreation objectives while meeting SCARNG's mission objectives.
- Provide for the safety of recreational users.

GOAL: PROVIDE FOR SAFE OUTDOOR RECREATION AND FITNESS OPPORTUNITIES THAT EDUCATE USERS ABOUT STEWARDSHIP ON MILITARY LANDS AND THE MISSION OF THE SCARNG.

SUCCESS CRITERIA

An active recreation program with staff engagement opportunities.

- **Green:** Recreational opportunities available <90% of the year.
- **Amber**: Recreational opportunities available 50% -89% of the year.
- **Red**: Recreational opportunities available >50% of the year.

OBJECTIVE 1. OPERATE AND MAINTAIN AN INTERPRETIVE PUBLIC TRAIL.

Working in conjunction with partnering NGO's, the SCARNG is maintaining and operating a section of the Palmetto Trail that runs along the south boundary of the installation.

SUCCESS CRITERIA

Maintain the trail and promote usage with zero impact to the training mission.

- **Green:** Trail open >75% of the year with no net loss of training days/ activities.
- **Amber**: Trail open 75%-%50 of the year with no net loss of training days/ activities.
- **Red**: Trail open >50% of the year or a negative impact to the training mission.

3.13 CLIMATE CHANGE AND REGIONAL GROWTH

Over the past decade, two issues have taken a more prominent role in the Conservation discussion: Climate Change and Regional Growth. Both issues are addressed in this section because they share the same goals: protecting mission capability through planning, adaptive management, and proactive innovative solutions. The scope of both of these issues are complicated and go beyond the boundaries of our installation. They require innovation, planning and a level of collaboration that exceeds any of our past efforts.

CLIMATE CHANGE

In January 2019, DoD published *Report on Effects of a Changing Climate to the Department of Defense.* The report provides an assessment of the significant vulnerabilities from climate-related events in order to identify high risks to mission effectiveness on installations and to operations. Although CHTC was not specifically addressed in the document, other installations within the Southeast region were included. The climatic impacts anticipated in the Southeast region can also reasonably be anticipated at CHTC.

The report anticipates recurrent flooding, drought, and wildfires as the greatest impacts. These impacts are consistent with climatic model predictions of a general increase in extreme weather events. Specifically, intense storm and rainfall events followed by long periods of drought and increased average summer temperatures.

Anticipated Effects of Future Climate Scenarios
Increased Black Flag Days
Increased Fire Hazard Days
Increased Wildfires
Reduced Number of Prescribed Burn Days
Increased Number of Endangered Species
Increased Management Requirements
Species Movement & Habitat Shifts
Increased fluctuation in lake levels
Increased shoreline exposure
Increased Need for Natural infrastructure Management

REGIONAL DEVELOPMENT

Growth in McCormick County and the area surrounding CHTC has been slow but steady since the 1970's. This trend is predicted to continue through 2030 (SC Department of Employment & Workforce, *Community Profile McCormick County*, 2019). While McCormick County is predicted to remain predominantly rural and sparsely populated, the area around Lake Thurmond is becoming a hub of regional recreation. The majority of the shoreline property along the lake is owned by the USACE and is not currently available for public development. If the USACE were to make this land available to the public, it would result in an explosion of vacation home development. The region is almost equal distance from the Atlanta, Columbia, and Greenville metro areas.

Development at this scale would have detrimental impacts on the ability of the SCARNG to conduct training at CHTC. To avoid these impacts, SCARNG and CHTC personnel need to increase our involvement and our profile within the Lake Thurmond regional planning community.

GOAL: PROTECT THE MISSION CAPABILITY OF THE SCARNG THROUGH PLANNING, ADAPTIVE MANAGEMENT, AND PROACTIVE, INNOVATIVE SOLUTIONS.

An active program that proactively seeks to integrate innovative solutions and adaptive management strategies into our planning documents.

SUCCESS CRITERIA

- **Green**: All plans current and up to date
- **Amber**: 50% of Plans current and up to date or under revision
- **Red:** <50% of plans current and up to date or under revision

OBJECTIVE 1: INTEGRATE CLIMATE RESILIENCY INTO THE SCARNG PLANNING PROCESS.

As stated above, our primary goal is to protect the mission capability of the SCARNG. The first step in doing that is to identify and plan for potential impacts.

SUCCESS CRITERIA

- **Green:** All plans are current and address potential climatic impacts.
- **Amber**: 50% of plans are current and address potential climatic impacts.
- **Red**: < 50% of plans are current and address potential climatic impacts.

OBJECTIVE 2: ENSURE CLIMATE RESILIENCY ADAPTION AND MITIGATION OF ADVERSE IMPACTS

This Objective will be accomplished through the scientifically and data driven decision making, the establishment of achievable targets, collaborative planning, and adaptive management.

SUCCESS CRITERIA

- **Green:** Completion or adoption of a Climate Resiliency Strategy.
- **Amber**: Ad-Hoc implementation of resiliency and adaptation measures.
- **Red**: No action on Climate Resiliency & Adaptation.

OBJECTIVE 3: DEVELOP AND MAINTAIN PARTNERSHIPS

The South Carolina Military Department has a significant presence across the state. We over 94 separate properties that we manage or occupy. To ensure that we are able to meet our mission goals we need to be good neighbors. This means that we need to be engaged with the local community. This engagement can take a variety forms, but it is often based around partnerships. This objective encourages the development and maintenance of these partnerships to protect our mission and enhance our communities.

SUCCESS CRITERIA

- **Green:** Hold biannual meetings with local and regional partners.
- **Amber**: Hold annual meetings with local and regional partners.
- **Red**: No partner meetings are held.

1

4 PLAN IMPLEMENTATION

4.1 PROJECT DEVELOPMENT AND PRIORITIZATION

Preparation and implementation of this INRMP is required by DoD Instruction 4715.03 and AR 200-1 and is a high funding priority. There are several programs within this INRMP that are required for compliance with other laws, especially laws related to endangered species and waters of the US/wetlands. However, it is unlikely that all programs within this INRMP will be funded immediately. Therefore, projects and programs are listed in relative importance. Estimated time schedules are provided by fiscal year.

4.2 PARTNERSHIPS AND COOPERATIVE AGREEMENTS

Since the inception of the natural resources program in 1992, partnerships have played a significant role to accomplish our primary goal of protecting the training mission. These partnerships have taken many forms, both formal and informal. They have been with other installations, other government agencies, and NGO's. Below are a few of the more significant and longest lasting partnerships.

University of South Carolina (USC)

Our partnership with USC was the first that we established and served as the model for several others. Our relationship with USC is a two way street, they provide us assistance on individual projects. We provide research opportunities for students. We also frequently make our staff available at classes at the University to share our experiences and expertise.

South Carolina Department of Natural Resources (SCDNR)

SCDNR is our second longest running partnership. Over the years we have worked with them for a variety of projects and surveys. Projects with SCDNR have ranged from planning levels surveys to Summer Camp outreach programs.

While USC and SCDNR have been our most consistent partners, there have been other partnerships that provided important outcomes, including with the following entities:

- Natural Resources Conservation Service (NRCS)
- US Forest Service (USFS)
- US National Park Service (NPS)
- Bureau of Land Management (BLM)
- Bureau of Indian Affairs (BIA)
- Clemson University

4.3 FUNDING

Funding for INRMP implementation can come through a variety of sources depending on the implementation task, available funding, current funding guidance, and SCARNG and CHTC priorities. In addition, forestry, wildlife, prescribed burning, and recreation projects managed by USACE staff are paid for through their funding sources, separate from SCARNG and CHTC funding sources.

The potential funding sources through SCARNG include environmental, facilities management, and other Army-funded programs. In addition, some activities may be funded through grants or cost-sharing with other entities.

Implementation of this INRMP is subject to the availability of annual funding. CHTC will make the best effort to request funding through appropriate channels and implement the INRMP based on the highest priorities using the available funding.

APPENDICES TABLE OF CONTENTS

LIST OF TABLES

A. ACRONYMS

AFB	Air Force Base
AR	Army Regulation
ARNG-ILE	Army National Guard Environmental Branch
BASH	Bird Aircraft/Wildlife Strike Hazard
BGEPA	Bald and Golden Eagle Protection Act
BMPs	Best Management Practices
CAA	Conservation Action Area
CHTC	Clarks Hill Training Center
C-Tracker	Conservation Tracker Database
COWASEE Basin	Congaree, Wateree, and Santee Rivers
DA	Department of the Army
DoD	Department of Defense
EA	Environmental Assessment
EO	Executive Order
FJMR	Fort Jackson Military Reservation
FY	Fiscal Year
GIS	Geographic Information System
HUC	Hydrologic Unit Code
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
JRSOI	Joint Reception, Staging, Onward Movement and Integration
ITAM	Integrated Training Area Management
IPMP	Integrated Pest Management Plan
ISR	Installation Status Report
JCUB	Joint Compatible Use Buffer
JLUS	Joint Land Use Study
MAPS	Migratory Avian Productivity and Survivorship
MBTA	Migratory Bird Treaty Act
MTC	McCrady Training Center
NCO	Non-Commissioned Officer
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NGO	Non-governmental Organization
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OMS	Organizational Maintenance Shop
RCW	Red-cockaded Woodpecker

REC	Record of Environmental Consideration
REPI	Readiness and Environmental Protection Integration
ROE	Review of Operation and Effect
SCARNG	South Carolina Army National Guard
SCMD	South Carolina Military Department
SCEMD	State Emergency and Management Assistance Compact
SCDNR	South Carolina Department of Natural Resources
SMPI	Soil Management Implementation Plan and Inventory
SSS	Special Status Species
STPF	J. Strom Thurmond Project Forest
SWAP	State Wildlife Action Plan
SWPPP	Stormwater Pollution Prevention Plan
T&E	Threatened and Endangered
USACE	US Army Corps of Engineers
USC	United States Code
USC	University of South Carolina
USEPA	US Environmental Protection Agency
USFS	US Forest Service
USFWS	US Fish and Wildlife Service
UXO	Unexploded Ordinance
VRT	Vehicle Recovery Team

B. MAPS

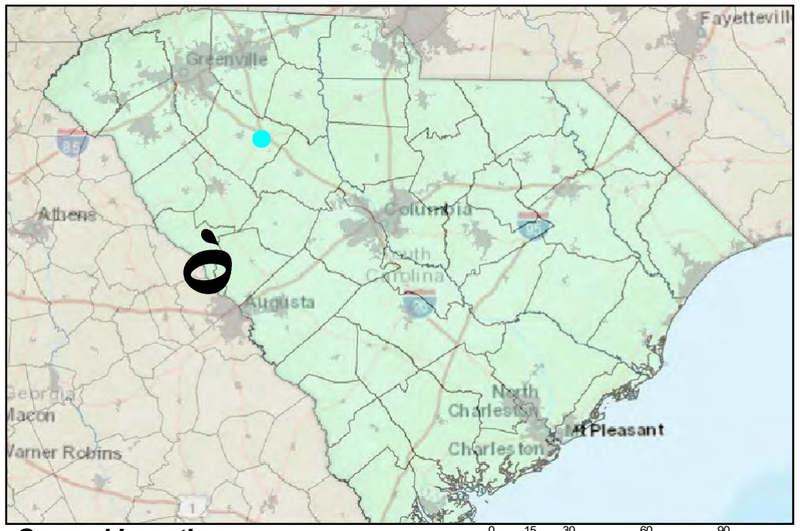
Figure 1. General Location & Layout

Figure 2. Soils

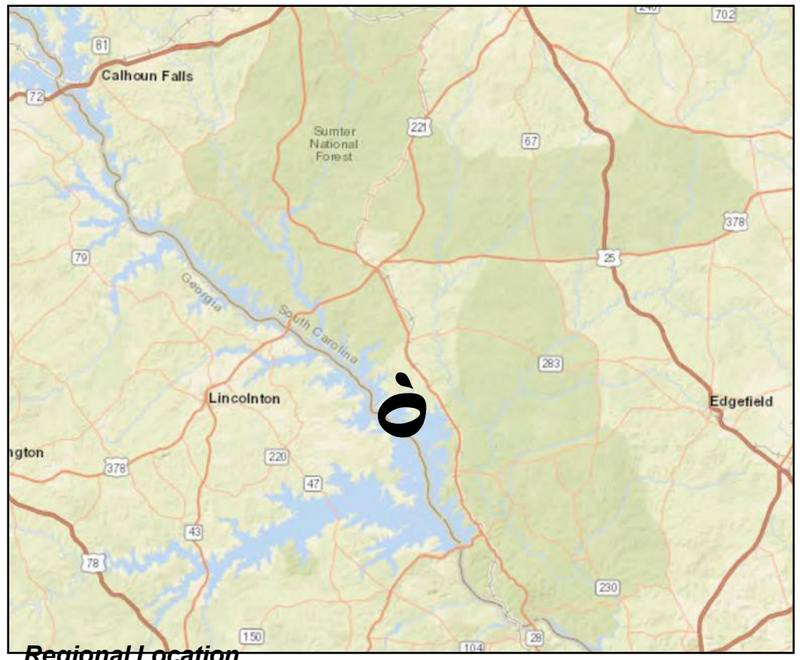
Figure 3. Water & Wetlands

Figure 4. Vegetation Communities

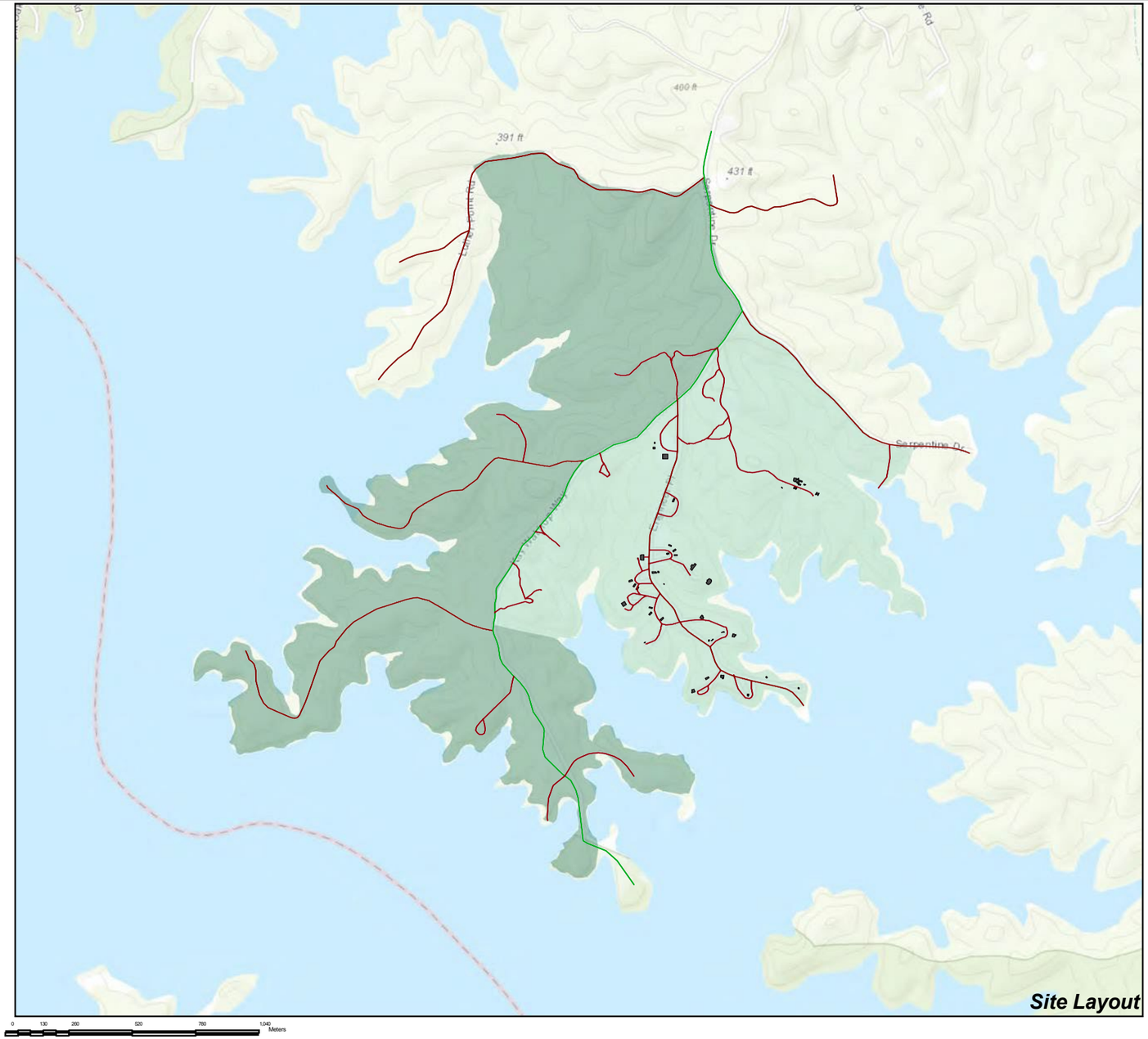
Figure 5. Caution Areas



General Location



Regional Location



Site Layout

Clarks Hill Training Center

General Location and Layout

Legend

Clarks Hill Training Center
- Limited Use Area
- Unlimited Use Area

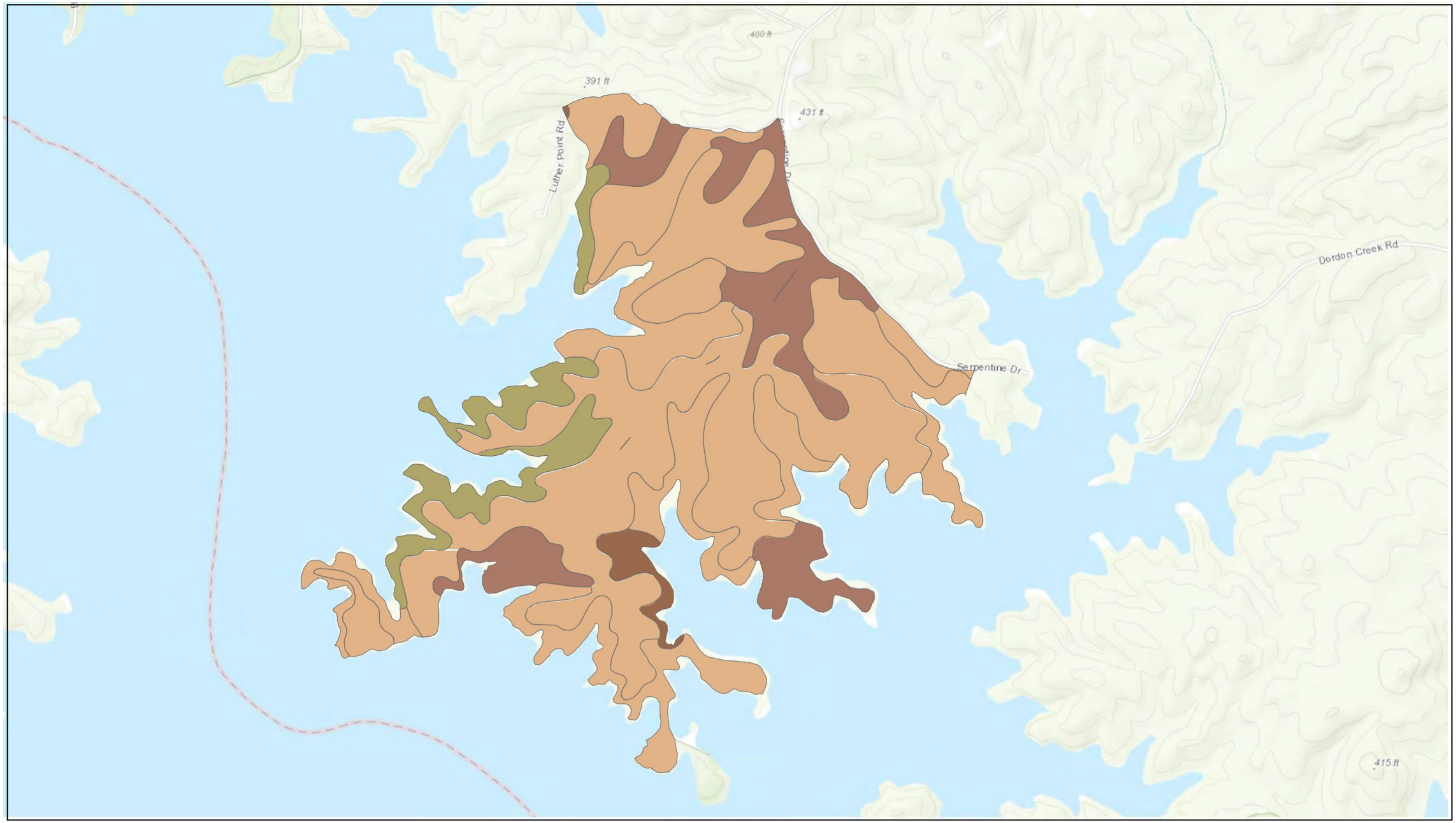
Structures
- Structures

Clarks Hill Training Site

O	Created For CHTC INRMP
Figure Number 1	Checked by:SCARNG Conservation
	Date: 4/5/2019

CLARKS HILL

Clarks Hill



Legend

Unit Name Georgeville silt loam | Herndon very fine sandy loam | Nason loam | Tatum silt loam

0 120 240 480 720 960
Meters

Soils	Created For CHTC INRMP
Figure Number 2	Checked by:SCARNG Conservation
	Date: 4/23/2019

Clarks Hill

Legend

Wetlands

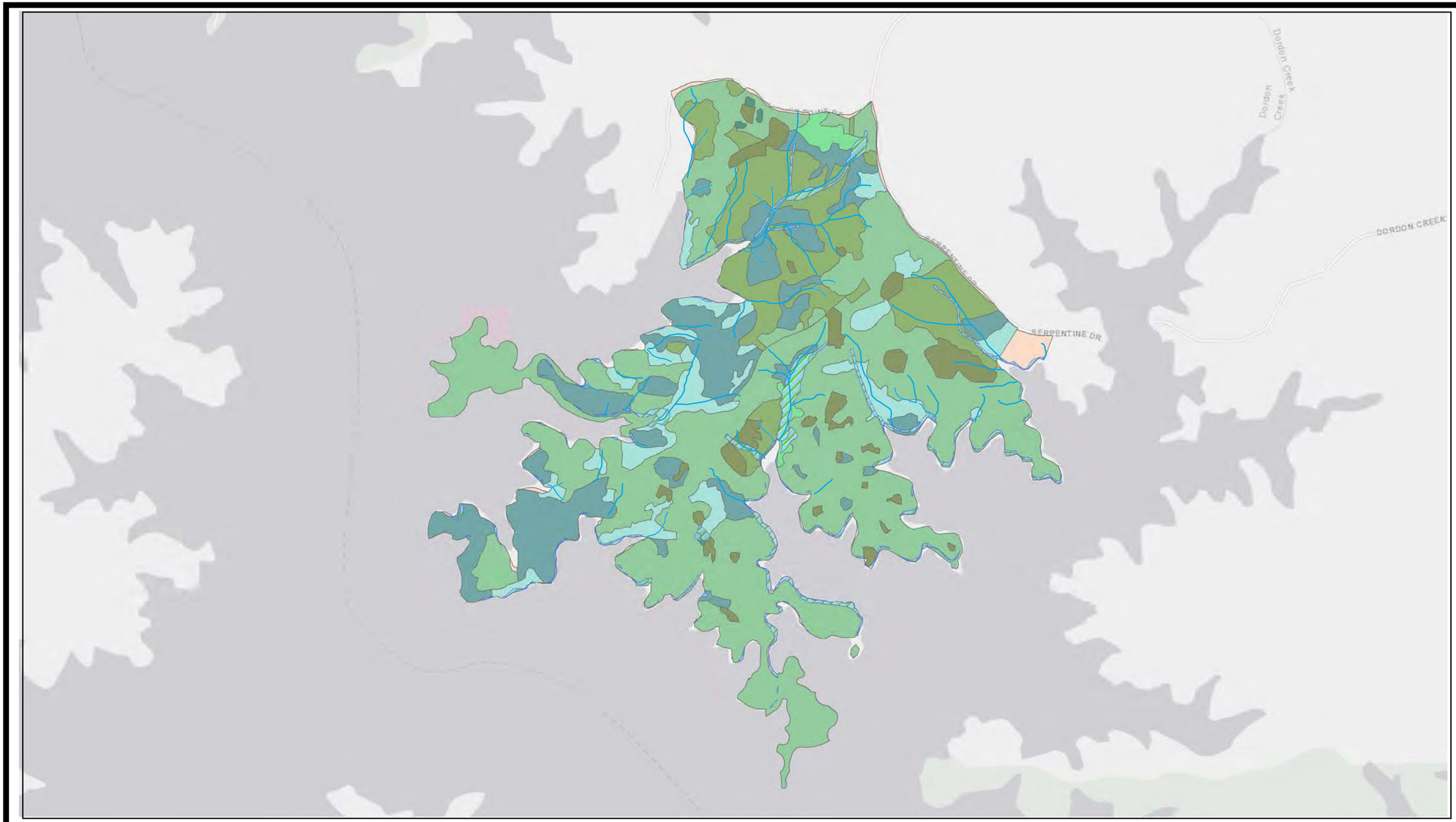
Open Water on SCARNG Property

0 100 200 400 600 800

Meters

Water & Wetlands	Created For CHTC INRMP
Figure Number 3	Checked by:SCARNG Conservation
	Date: 4/23/2019

Clarks Hill



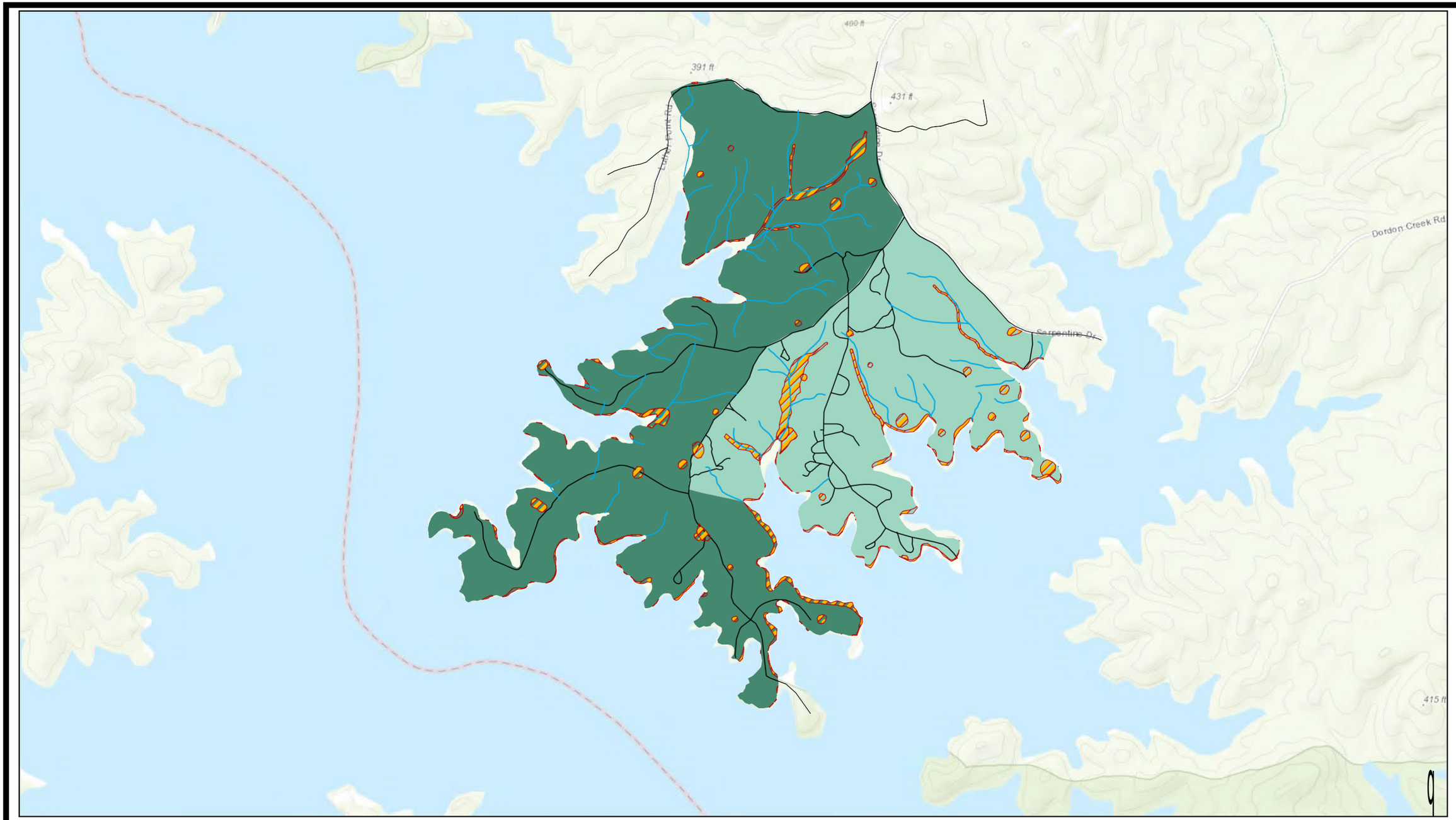
Legend

Community Type

- Depressions
- Mixed Hardwood
- Mixed Hardwood-Pine
- Non-Forest Areas
- Pine
- Pine-Mixed Hardwoods
- Selective Cut / Pine Beetle Areas

0 125 250 500 750 1,000
Meters

Vegetation Community	**Created For CHTC INRMP**
Figure Number 4	**Checked by:SCARNG Conservation**
	Date: 4/23/2019



Clarks Hill

Legend

Clarks Hill Training Center

- Limited Use Area
- Unlimited Use Area
- Caution Areas
- Streams
- Road

Note: Caution Areas are a conglomeration of limited use areas that training and access restrictions

0 125 250 500 750 1,000
Meters

Caution Areas	**Created For CHTC INRMP**
Figure Number 5	**Checked by:SCARNG Conservation**
	Date: 4/23/2019

C. Implementation Tables

The Goals and Objectives Summary and the Project List include program-wide, as well as items specific to MTC and Clarks Hill Training Center (CHTC).

C.1 Goals and Objectives Summary

Climate Change and Regional Growth

Goal: Protect the Mission capability of the SCARNG through planning, adaptive management, and proactive innovative solutions.

Objective: Ensure climate resiliency adaption and mitigation of adverse impacts
This Objective will be accomplished through the scientifically and data driven decision making, the establishment of achievable targets, collaborative planning, and adaptive management.

Objective: Integrate climate resiliency into the SCARNG planning process
Our primary goal is to protect the mission capability of the SCARNG. The first step in doing that is to identify and plan for potential impacts.

Objective: Develop and Maintain Partnerships
The Department of Defense's presence in the Midlands of South Carolina is significant. There are five military installations; three active duties and two National Guard. Active and reserve components of the Army, Navy, Air Force and Marines utilize these bases. To reduce development related pressure, the installations are working together to leverage our presence in regional decision-making. Specifically, the South Carolina Military Department, Fort Jackson, and Shaw Air Force Base have joined together with local governments and Non-Governmental Organizations (NGO) to form the Midlands Area Joint Installation Consortium. The purpose of the Consortium is to facilitate collaboration on projects including a region-wide Joint Land Use Study (JLUS) or the implementation of Joint Compatible Use Buffers (JCUB) program. To further leverage our local partnership, we are also pursuing a Sentential Landscape designation.

Cultural Resources Management

Goal: Our goal is to protect and preserve the cultural and historic resources entrusted to us, while maintaining and supporting the mission of the National Guard.

Objective: ICRMP Update and Revision
Five-year update and revision of the Integrated Cultural Resource Management Plan to ensure the SCARNG CRM continues to operate under provisions conducive to mission goals.

Objective: Public Engagement
Develop and participate in community engagement initiatives to foster public understanding of the SCARNG's commitment to cultural preservation.

Objective: ARPA Compliance

Conduct annual review of eligible sites and all cemeteries located on the McCrady Training Center. Ensure appropriate preservation measures are enforced at eligible sites and cemeteries.

Objective: Protect Cultural Resources
Routinely assess the condition of all eligible sites located on the McCrady Training Center. Ensure appropriate signage and protection of all cultural sites.

Objective: Comply with Section 106 of the NHPA
Ensure that all SCARNG undertakings are reviewed by the SHPO, THPOs, and all interested parties in compliance with Section 106 of the National Historic Preservation Act.

Fish and Wildlife

Goal: Conserve and enhance wildlife populations and their associated habitat for optimum levels of biodiversity and ecosystem health, while maintaining a realistic training environment.

Objective: Manage wildland habitat to promote species diversity
Modification of existing wildland habitat to increase biodiversity of native flora and fauna.

Objective: Long term monitoring of fish and wildlife
Initiate PLS and continue ongoing PLS to develop trend data of fish and wildlife.

Forest and Vegetation

Goal: A forest that supports the military mission and maintains ecosystem integrity. This is a forest that is characterized by high habitat diversity and managed for targeted training opportunities. Targeted Training Opportunities refers to matching training missions to land management practices.

Objective: Maintain Diversity of Forest Habitats
Historically, the forested lands at CHTS ranged from open areas of southern yellow pines with little midstory but a high diversity of plant life in the ground layer, as well as, open upland hardwoods to hardwood drainage ways with healthy midstory/ground layer of vegetation. The intent of this objective is to accelerate habitat restoration in targeted areas, assist in the fire management program and have beneficial conditions for both the training community and the overall health of the eco- system.

Objective: Maintain open forest midstory
All historic accounts of long-leaf pine forests described them as “open and park like” with a conspicuous lack of midstory trees and shrubs. They were also described with a high diversity plant in the ground layer. This sub-climax condition is the result of a well-established fire regime. This open park-like condition is beneficial to both the training community and the overall health of the eco- system. The intent of this objective is to aid the wild land fire management program, to accelerate habitat restoration in targeted areas, and provide a more usable training space to meet the military mission.

Objective: Long Term Monitoring of Vegetative Communities
Monitor condition and species composition of vegetative communities across SCARNG Training Centers.

GIS Data

Goal: Support the mission of the South Carolina Military Department, and specifically the SCMD Environmental division, through the development and maintenance of an integrated GIS program.

Objective: Provide spatial analysis and GIS services for decision-making.
The power of GIS comes from its ability to analyze diverse and complicated datasets through a spatial lens. This analysis then enables decision makers to make more an informed choice. Improved analytical capability increases our return on our GIS investment.

Objective: GIS model creation
The power of GIS comes from its ability to analyze diverse and complicated datasets through a spatial lens. This analysis then enables decision makers to make more an informed choice. The development and use of models aids in this analysis. Improved analytical capability increases our return on our GIS investment.

Objective: Develop a data maintenance/update strategy
The SCMD has an extensive collection of training and natural resources data. It is vital that a strategy is in place to continually update and maintain these holdings, keeping them as current and accurate as possible.

Grounds

Goal: To maintain the grounds at the McCrady Training Center in a safe, attractive and professional state, while incorporating sustainable principals.

Objective: Develop a sustainable ground maintenance program.
In accordance to the requirements in EO 13693: to establish a method for reducing water, energy, and vehicle fuel usages each FY via developing a comprehensive Sustainable Grounds Management Strategy.

Outreach, Awareness and Education

Goal: Protect the Training Mission of the South Carolina Army National Guard, by fostering a public understanding of the Guards efforts at conservation stewardship, and the critical nature of the Guards mission.

Objective: Develop and maintain partnerships
The Department of Defense's presence in the Midlands of South Carolina is significant. There are five military installations; three active duties and two National Guard. Active and reserve components of the Army, Navy, Air Force and Marines utilize these bases. To reduce development related pressure, the installations are working together to leverage our presence in regional decision-making. Specifically, the South Carolina Military Department, Fort Jackson, and Shaw Air Force Base have joined together with local governments and Non-Governmental Organizations (NGO) to form the Midlands Area Joint Installation Consortium. The purpose of the Consortium is to facilitate collaboration on projects including a region-wide Joint Land Use Study (JLUS) or the implementation of Joint Compatible Use Buffers (JCUB) program. To further leverage our local partnership, we are also pursuing a Sentential Landscape designation.

Objective: Raise community awareness

In order to maintain the current favorable opinion that the public holds for the military mission, the SCARNG needs to actively work to inform the public of our efforts to maintain the resources that have been entrusted to us.

Objective: Continue education & training program
Continue the implementation of the State-Wide Environmental Education & Training program

Pest

Goal: Ensure compliance with DoD Instruction 4150.07, "DoD Pest Management Program"

Objective: Reduction of Pesticide Use
This objective is intended to meet the Presidential Executive Order and the DOD Measure of Merit #2: to reduce the total amount of pesticide applied each year to federal military installments.

Objective: Reduce impacts to training and the environment from nuisance wildlife.
Reduce impacts of nuisance wildlife on training activities.

Objective: Manage invasive/ noxious plant species
This objective is to develop a proactive program in accordance to EO 13112, to facilitate the management and control of Invasive/Noxious plants and animals. This program is managed as part of our Integrated Pest Management Plan. SCARNG will monitor both the overall health of the system as well as the success or failure of individual projects as part of this objective.

Program Management

Goal: Our Goal is to be a proactive program that anticipates and meets the needs of the National Guard. We strive to be a national leader in efficiency, innovation and diversity, while providing our staff an environment that empowers and supports their creativity and initiative.

Objective: Facilitate program implementation through the use of seasonal staff.
The Columbia Metro Area has a large population of students seeking under graduate and post graduate degrees in conservation related fields. This provides us with a unique opportunity to supplement our staff to work on seasonal projects.

Objective: Maintain current and accurate species lists
The purpose of this objective is to have an accurate species information that is both current and in easily accessible and usable format. In the past individual surveys were in different formats and stored in in multiple locations making it difficult to access the information. Our species data has been transferred to central species tracking database. This database contains both individual occurrences recorded from Planning Level Surveys, and general presence/ absence for each of our installations. This includes both verified records and potential occurrences.

Objective: Maintain easy and up to date access to all relevant documents.
Maintain easy and up to date access to all records, surveys, reports, reviews and other relevant documents. This accomplished through the use of both a document tracking database and our file management system.

Objective: Contribute to the National Guard Environmental program at a National Level

The success of the local Environmental Program is directly linked to the success of the National Program. To facilitate that success SCARNG Conservation staff will participate in Committees, review policy documents and reports, and provide general feedback and support to NGB to facilitate a strong overall environmental program.

Objective: Ensure Fiscal Sustainability for the Conservation Program
In order for the SCARNG Conservation Program to be successful, it requires sound and sustainable fiscal management. This includes program out year requirements, managing budgets and tracking procurements.

Objective: To employ a staff of subject matter experts that are innovative leaders and current in their field.
To employ a staff of subject matter experts that are innovative leaders and current in their field. That are able to use their knowledge and experience to implement program management plans and support the mission of the SCARNG

Objective: Facilitate Program Support and Implementation through State-of-the-Art Technology
Conservation Management requires the analysis of complex and diverse systems. Understanding these systems is often a very data intensive undertaking that then require repackaging to communicate the information. As a result, Conservation projects often require and utilize the most current technology.

Objective: Ensure That all Planning Documents are Relevant & Current
Keep all planning documents current though annual reviews, and updates. This project also includes document revisions, and other administrative task to improve document management and document relevance in day to day business practices.

Objective: Support Program implementation through providing staff the tools, equipment, and supplies needed to perform their day to day work activities.
In order to effectively perform their duties, the staff needs the proper supplies and equipment. This objective is to ensure that they are provided these materials.

Soil and Water

Goal: To maintain training lands, while protecting and enhancing soil and water quality, and ensuring compliance with all applicable laws and regulations.

Objective: Erosion Repair Site Monitoring & Evaluation
The intent of this objective is to determine if the activities in Section 2.3.2 Objective 2 of the McCrady INRMP produce the desired results. Monitoring and project evaluation helps:

- identify what works, what did not work, and what should continue,
- improves actions where they are less effective, and
- change actions if they are ineffective.

Objective: Facilitate the coordination, repair and identification of eroded areas across the training site.
The purpose of this objective is to aid in the execution of the Soil Management Implementation Plan & Inventory (SMPI) developed under Objective ID #6 in this database. This is done through coordination of interested parties to develop budgets, identify resourcing and aid in planning and execution.

Objective: Develop a systematic approach for Soil & Water Management
The three biggest obstacles to a successful Soil and Water Management program are; communication, coordination, and resourcing (funding). The intent of this objective is to provide a structured system to facilitate coordination and communication. This in turn would allow for more targeted use of available resources. The intent is to hold a quarterly meeting between all stakeholders (Facilities Management Office, Training/ ITAM, Natural Resources and pertinent Training Site Staff). The 1st and 4th Quarter meeting would focus on review of completed work, identification and prioritization of work still needed, and the development of available budget and resourcing to execute the work. The 2nd and 3rd Quarter meeting would be to track on going work and note any problems or changes in the execution plan.

Objective: Repair identified erosion sites
The purpose of this objective is to implement the Soil Management Implementation Plan & Inventory (SMPI) developed under Objective ID #6 in this database

Special Status Species

Goal: Conserve and enhance Threatened, Endangered and Special Status Species (SSS) populations and their associated habitat for optimum levels of biodiversity and ecosystem health.

Objective: Special Status Species Monitoring
Develop a protocol for monitoring SSS, which will create a species list and monitoring period.

Objective: Special Status Species Habitat Management
Maintain and/or modify existing habitat to increase biodiversity of SSS.

Objective: Threatened and Endangered Ecosystem Management
Manage ecosystems level factors that support threatened and endangered (T&E) species population health and survivorship.

Wetlands

Goal: A Wetlands Management Program that protects and enhances all wetland systems and ensures compliance with all applicable laws and regulations.

Objective: Collection of data to support planning and monitoring initiatives.
This objective supports the planning and check stages of our adaptive management strategy.

Objective: Sustain or Enhance Wetland Systems at MTC & CHT
This objective addresses the action and the analysis phases of our adaptive management strategy. It focuses on implementing projects derived from our planning process and analyzing the success of the implemented projects.

C.2 CURRENT PROJECT LIST

Climate Change and Regional Growth: Develop and Maintain Partnerships

SERPPAS Steering Committee (Project # 294)

Participate in the SERPPAS Steering Committee.

Facility:	Statewide / Program-wide
Status:	Active
Frequency:	C-Annual
STEP Project Number:	SC0NG150001
Estimated Cost:	$2,500.00/year
Proponent:	-
Year Proposed:	Current

Sentinel Landscape Program (Project # 319)

Development and implementation of a MAJIC Sentinel Landscape.

Facility:	Statewide / Program-wide
Status:	Active
Frequency:	C-Annual
STEP Project Number:	TBD
Estimated Cost:	$0
Proponent:	ENV
Year Proposed:	Current

Climate Change and Regional Growth: Integrate climate resiliency into the SCARNG planning process

Develop a Climate Resiliency Integration Plan (Project # 349)

Develop a strategy to review existing plans for climate resiliency integration and identify opportunities.

Facility:	Statewide / Program-wide
Status:	Planning
Frequency:	Defined
STEP Project Number:	SCC70060010
Estimated Cost:	$10,000.00/year
Proponent:	-
Year Proposed:	20

Implement Climate Resiliency Plan (Project # 350)

Implement a strategy to review existing plans for climate resiliency integration and identify opportunities.

Facility:	Statewide / Program-wide
Status:	Planning
Frequency:	D-Annual

STEP Project Number: SCC70060010
Estimated Cost: $10,000.00/year
Proponent: -
Year Proposed: 21

Cultural Resources Management: Comply with Section 106 of the NHPA

NEPA and Section 106 Review (Project # 307)

This project is for regular reoccurring aspects of NHPA and Section 106 and NEPA Review.

Facility: Statewide / Program-wide
Status: Active
Frequency: C-Annual
STEP Project Number: SC0NG160001
Estimated Cost: $300.00/year
Proponent: -
Year Proposed: Current

ICRMP Update and Revision (Project # 223)

Bringing the Integrated Cultural Resource Management Plan (ICRMP) up to date for 2014-2019.

Facility: Statewide / Program-wide
Status: Active
Frequency: Multi-year
STEP Project Number: SCC70060010
Estimated Cost: $ 5,000.00/year
Proponent: -
Year Proposed: Current

Native American Consultation (Project # 134)

Conduct Consultation with Native American Tribes.

Facility: Statewide / Program-wide
Status: Active
Frequency: C-Annual
STEP Project Number: SC000060008
Estimated Cost: $ 25,750.00/year
Proponent: ENV
Year Proposed: Current

Cultural Resources Management: Protect Cultural Resources

Monitor Cultural Sites (Project # 166)

Bringing the Integrated Cultural Resource Management Plan (ICRMP) up to date for 2014-2019.

Facility:	Statewide / Program-wide
Status:	Active
Frequency:	D-Annual
STEP Project Number:	SCC70140002
Estimated Cost:	$ 5,000.00/year
Proponent:	ENV
Year Proposed:	Current

Cultural Resource Historic GIS Mapping Project (Project # 227)

This GIS project is a long-term project designed to acquire, digitize, analyze historic cartographic sources to locate previously unidentified archaeological resources, identify the history of the various military disturbances at the MTC. Also related to this idea, is the possibility of using this locational model as part of the development of a PA with the SC SHPO that uses location of a project as one variable to determine whether the project would require external review.

Facility:	Statewide / Program-wide
Status:	Active
Frequency:	Multi-year
STEP Project Number:	SC000060014
Estimated Cost:	$ 5,000.00/year
Proponent:	-
Year Proposed:	Current

Cultural Program Management (Project # 317)

This project provides overarching support to the Cultural resources program. It supports tasks that cross project lines within the Cultural program.

Facility:	Statewide / Program-wide
Status:	Active
Frequency:	C-Annual
STEP Project Number:	SCC70140002
Estimated Cost:	$ 35,000.00/year
Proponent:	ENV
Year Proposed:	Current

Fish and Wildlife: Long-term Monitoring of Fish and Wildlife

Herpetological Monitoring (Project # 76)

Herpetological Monitoring project assess the distribution, ecology and habitat of the herpetofauna associated at MTC and CHT. Also provides table showing habitat preferences of all species native to the base. This project also generates an on-going reptile/amphibian species list.

Facility:	Statewide / Program-wide
Status:	Active
Frequency:	C-Annual
STEP Project Number:	SCC70060014
Estimated Cost:	$ 7,500.00/year
Proponent:	ENV

Year Proposed: Current

Analyze and Plan for Pollinator Survey (Project # 78)

During this phase, the survey will be reviewed, and current status of the pollinator population discussed. If it is decided that the population requires management strategies to be implemented, then a plan will be developed.

Facility: Statewide / Program-wide
Status: Planning
Frequency: Multi-year
STEP Project Number: SCC70060014
Estimated Cost: $ 7,500.00/total
Proponent: ENV
Year Proposed: 21

Study on Propagation of Listed Plant Species (Project # 79)

Some state and federally listed plant species that occur on MTC do not have thriving population. This study will check on the feasibility of propagating state and federally listed plant species as well as species of cultural interest to federally recognized Native American populations.

Facility: Statewide / Program-wide
Status: Planning
Frequency: Defined
STEP Project Number: SCC70060008
Estimated Cost: $ 20,000.00/total
Proponent: ENV
Year Proposed: 22

PLS Birds at Clarks Hill (Project # 111)

Planning Level Survey for Birds at Clarks Hill Training Center. Includes breeding Bird Surveys and point counts. This is a multiyear project that will run from FY12-FY14.

Facility: Clarks Hill Training Center
Status: Active
Frequency: Multi-year
STEP Project Number: SC96A060003
Estimated Cost: $ 10,433.00/Annually
Proponent: ENV
Year Proposed: Current

Bat Population Monitoring (Project # 129)

This project is for the long-term monitoring of Chiropteran on SCARNG managed property. This project will primarily use acoustic means to collect information about bat populations. This data will be shared with SCDNR and DoD Bat population specialists.

Facility: Statewide / Program-wide
Status: Active

Frequency:	D-Annual
STEP Project Number:	SCC70060008
Estimated Cost:	$ 30,000.00/Annually
Proponent:	ENV
Year Proposed:	Current

Large and Medium Wildlife PLS (Project # 348)

Provide baseline information concerning the abundance and diversity of medium and large mammals at the Clarks Hill Training Center near Plum Branch, SC, that will be used for management purposes at this site. Of particular interest is the presence and abundance of medium and large mammal species across the site and how these are influenced by human activities.

Facility:	Clarks Hill Training Center
Status:	Active
Frequency:	Defined
STEP Project Number:	SC96A160001
Estimated Cost:	$ 55,000.00 Total
Proponent:	ENV
Year Proposed:	Current

Fish and Wildlife: Manage Wildlife Habitat to Promote Species Diversity

Herpetological PLS at CHTC (Project # 309)

This project is to conduct a PLS at CHTC in accordance with the SIKES requirements. The PLS will look at both reptile and amphibian populations across the installation. To include both terrestrial and aquatic habitats with the CHTC.

Facility:	Clarks Hill Training Center
Status:	Active
Frequency:	Defined
STEP Project Number:	SC96A160001
Estimated Cost:	$ 25,000.00 Total
Proponent:	ENV -Conservation
Year Proposed:	19

Food Plots (Project # 139)

Planting of Food Plots to help enhance wildlife habitat.

Facility:	Statewide / Program-wide
Status:	Active
Frequency:	D-Annual
STEP Project Number:	SC96A160001
Estimated Cost:	$ 40,000.00/Year
Proponent:	ENV
Year Proposed:	Current

Develop a Fire Management Plan (Project # 157)

Create a comprehensive plan that will establish firebreaks and burning regimes for the forested areas at CHTC. This will be accomplished by using data from the forest management plan and consulting with the USACE.

Facility:	Clarks Hill Training Center
Status:	Planning
Frequency:	Defined
STEP Project Number:	SC96A060002
Estimated Cost:	$ 20,000.00 Total
Proponent:	ENV
Year Proposed:	21

Forest and Vegetation: Maintain Diversity of Forest Habitats

CHTC Floral PLS and Monitoring (Project # 340)

The purpose of this project is monitor and catalog floral species of concern at CHTC. This includes, wetlands species, at risk species, invasive, and threatened and endangered species. This is accomplished through the use of seasonal staff and contracted surveys.

Facility:	Clarks Hill Training Center
Status:	Planning
Frequency:	Multi-year
STEP Project Number:	SC96A060004
Estimated Cost:	$ 15,000.00/Year
Proponent:	-
Year Proposed:	Current

Scrub Oak Management Plan (Project # 91)

Through use of data collected in the Hardwoods mapping project, a plan for the removal and maintenance of dense hardwood areas will be developed. This plan will describe specific stands in need of treatment and determine proponent and cost of each activity. This plan should be coordinated with Ft Jackson Forestry and the USACE Strom Thurmond Project to ensure management objectives follow their forestry objectives and should be updated every 5 years.

Facility:	Statewide / Program-wide
Status:	Planning
Frequency:	Multi-year
STEP Project Number:	SCC70060008
Estimated Cost:	$ 20,000.00 Total
Proponent:	TBD
Year Proposed:	21

Forest and Vegetation: Maintain Open Forest Inventory

Mid Story Removal (Project # 92)

Implementation of the Scrub oak management plan will consist of putting into practice the management practices described in the SOMP. This work will include mechanical thinning of sites, prescribed burning assistance, and chemical control in accordance with the recommendations of the Ft Jackson forest management plan and the USACE at the Strom Thurmond Project on Lake Clarks Hill.

Facility:	Statewide / Program-wide
Status:	Planning
Frequency:	C-Annual
STEP Project Number:	SCC70060008
Estimated Cost:	$ 10,000.00/Year
Proponent:	TBD
Year Proposed:	Current

CHT Forestry Management Plan implementation (Project # 329)

Execute projects/ task from the CHT Forestry Management Plan.

Facility:	Clarks Hill Training Center
Status:	Active
Frequency:	Multi-year
STEP Project Number:	SC96A060007
Estimated Cost:	$ 25,000.00/Year
Proponent:	ENV
Year Proposed:	Current

GIS Data: Develop a Data Maintenance/Update Strategy

Create a 5-year Data Management Plan (Project # 6)

Develop a management plan that will address the following areas plan to keep track of and schedule updates for existing data, and creation of new data. All environmental GIS data layers will have a specified schedule for updates and routine maintenance.

Facility:	Statewide / Program-wide
Status:	Active
Frequency:	Multi-year
STEP Project Number:	SC000060010
Estimated Cost:	$ 5,000.00 Total
Proponent:	ENV
Year Proposed:	21

Implement 5-year Data Plan (Project # 7)

Implement and update 5-year Data plan. This includes performing both managerial/ administrative task and actual data creation, updating and maintenance.

Facility:	Statewide / Program-wide
Status:	Active
Frequency:	Multi-year

STEP Project Number: SC000060010
Estimated Cost: $ 15,000.00/Year
Proponent: ENV
Year Proposed: 22

Create SOPs for data handling (Project # 8)

Develop and implement standard operating procedures for the organization, maintenance, sharing, distribution and updating of all environmental GIS data, and ensure that all environmental staff follows these procedures.

Facility: Statewide / Program-wide
Status: Active
Frequency: Multi-year
STEP Project Number: SC000060010
Estimated Cost: $ 5,000.00 Total
Proponent: ENV
Year Proposed: 21

Update 5-year IT equipment plan (Project # 9)

Create and implement a plan to specify hardware and equipment maintenance and updates.

Facility: Statewide / Program-wide
Status: Active
Frequency: Multi-year
STEP Project Number: SC000060012
Estimated Cost: $ 5,000.00 Total
Proponent: ENV
Year Proposed: Current

SDE Management & Maintenance (Project # 257)

Create and implement a plan to specify hardware and equipment maintenance and update Manage the SCARNG enterprise GIS. Includes any common/routine/needed management of data layers, database schema/design, SQL server, services etc….

Facility: Statewide / Program-wide
Status: Active
Frequency: C-Annual
STEP Project Number: SC000060010
Estimated Cost: $ 20,000.00/Year
Proponent: ENV
Year Proposed: Current

Create & Manage a Document Management GIS Layer (Project # 259)

Create, manage, and maintain a GIS Document Management layer linking important environmental documentation to a physical/geographic area viewable in GIS.

Facility: Statewide / Program-wide
Status: Active

Frequency: C-Annual
STEP Project Number: SC000060010
Estimated Cost: $ 5,000.00/Year
Proponent: ENV
Year Proposed: Current

Manage SCARNG ArcGIS Online Account (Project # 260)

Facility: Statewide / Program-wide
Status: Active
Frequency: C-Annual
STEP Project Number: SC000060010
Estimated Cost: $ 0
Proponent: -
Year Proposed: Current

Update and improve JCUB parcel priority model (Project # 10)

Continue to develop and fine-tune the suitability model created for the JCUB (Joint Compatible Use Buffer) program. Find new and relevant data layers to incorporate into the model.

Facility: Statewide / Program-wide
Status: Active
Frequency: Multi-year
STEP Project Number: SCONG10001
Estimated Cost: $ 10,000.00 Total
Proponent: ENV
Year Proposed: Current

Update and improve JCUB parcel priority model (Project # 10)

Continue to develop and fine-tune the suitability model created for the JCUB (Joint Compatible Use Buffer) program. Find new and relevant data layers to incorporate into the model.

Facility: Statewide / Program-wide
Status: Active
Frequency: Multi-year
STEP Project Number: SCONG10001
Estimated Cost: $ 10,000.00 Total
Proponent: ENV
Year Proposed: Current

GIS Data: GIS Model Creation

Create and maintain soil erosion models (Project #11)

Create models of soil erosion for the training areas of McCrady Training center, to highlight areas that are current concerns, as well as to predict future areas of interest.

Facility: Statewide/ Program Wide
Status: Active
Frequency: Multi-Year

STEP Project Number: SCC70060009
Estimated Cost: $10,000.00 Total
Proponent: ENV
Year Proposed: 20

GIS Data: Provide Spatial Analysis and GIS Services for Decision-Making

Provide spatial analysis (Project #29)

Utilize GIS and ancillary data in spatial analysis to assist with resource management, project development, and decision making.

Facility: Statewide/ Program Wide
Status: Active
Frequency: Multi-Year
STEP Project Number: SC000060010
Estimated Cost: $10,000.00 Annual
Proponent: ENV
Year Proposed: Current

Migrate Species data to GIS (Project #241)

Incorporate data from the Species Database into GIS.

Facility: Statewide/ Program Wide
Status: Planning
Frequency: C-Annual
STEP Project Number: SC000060010
Estimated Cost: $5,000.00
Proponent:
Year Proposed: 21

Provide cartographic products as needed (Project # 28)

Provide access to the environmental GIS data holdings in the form of maps, aerial photography, and other cartographic products, in order to assist soldiers and staff in project development, resource management, training, and decision making.

Facility: Statewide/ Program Wide
Status: Active
Frequency: Multi-Year
STEP Project Number: SCB18060001
Estimated Cost: $5,000.00 Annual
Proponent: ENV
Year Proposed: Current

GI-STAR Support (Project # 261)

General management and maintenance for GI-STAR. Includes managing, updating, and maintaining services for GI-STAR; creating Help documentation for using GI-STAR; assisting with GI-STAR design, layout, etc.…

Facility:	Statewide/ Program Wide
Status:	Active
Frequency:	C-Annual
STEP Project Number:	SC000060010
Estimated Cost:	$5,000.00 Annual
Proponent:	-
Year Proposed:	Current

Outreach, Awareness and Education: Continue Education and Training Program

Develop ECO Training Materials (Project # 103)

Currently the SCARNG has limited materials for unit ECO's to use in their training programs. This project is for the development of a DVD that ECO's could use to train Unit Personnel

Facility:	Statewide/ Program Wide Status Planning
Frequency:	C-Annual
STEP Project Number:	SC000060018
Estimated Cost:	$15,000.00 Annual
Proponent:	ENV
Year Proposed:	Current

Develop an Integrated Training Plan/Curriculum (Project #102)

Currently the SCARNG has no integrated curriculum for environmental training. This leads to an inconsistent message and gaps in the quality and the type of information that is disseminated. This project will develop a standard set of courses along with tools & materials to be used during training.

Facility:	Statewide/ Program Wide
Status:	Planning
Frequency:	Defined
STEP Project Number:	SC000060018
Estimated Cost:	$5,000.00 Total
Proponent:	ENV/ITAM
Year Proposed:	21

Conduct ECO Training Statewide (Project# 104)

Currently the SCARNG has limited materials for unit ECO's to use in their training programs. This project is for the development of a DVD that ECO's could use to train Unit Personnel

Facility:	Statewide/ Program Wide
Status:	Active

Frequency: C-Annual
STEP Project Number: SC000060018
Estimated Cost: $5,000.00 Annual
Proponent: ENV
Year Proposed: Current

Develop Awareness Materials (Project #135)

Develop awareness materials, to include soldier cards, maps, and other handouts.

Facility: Statewide/ Program Wide
Status: Planning
Frequency: C-Annual
STEP Project Number: SCC70060007
Estimated Cost: $13,000.00 Total
Proponent: ENV
Year Proposed: Current

Develop Training Aids and Materials (Project # 226)

Facility Statewide/ Program Wide
Status: Active
Frequency: C-Annual
STEP Project Number: SCB18060001
Estimated Cost: $2,000.00 Total
Proponent: ENV
Year Proposed: 21

Outreach and Education: Raise Community Awareness

Maintain and Upgrade Interpretive Nature and Fitness Trail System (Project # 99)

Working under a National Public Lands Day grant from the NTF SCARNG constructed an interpretive nature trail and outdoor class room on the McCrady Training Center. The trail is a spur off of the Palmetto Trail, a trail that runs across the breadth of South Carolina, connecting the mountains to the coast. The trail has become a center piece of our current outreach program. The plan is to create a sister trail network at CHTC. The CHTC trail will provide recreation & exercise opportunities for users of CHTC , in addition to providing outreach and education opportunities. This project is to maintain and expand the SCARNG trail systems. This will facilitate our outreach efforts and provide increased outreach opportunities. In the past volunteers have been used to help construct and maintain the trail, this is a practice that will continue.

Facility: Statewide/ Program Wide
Status: Active
Frequency: C-Annual
STEP Project Number: GRANT
Estimated Cost: $1,000.00 Annual
Proponent: ENV
Year Proposed: Current

Conduct Requested Outreach Programs (Project # 100)

The Conservation office is periodically asked throughout each year to give talks & lectures or to set up a booth. These present excellent opportunities to educate the community about the mission and activities of the South Carolina Army National Guard. At a minimum the objective of this project is to meet the current demand. The ultimate goal of the project is to increase the number of Public Outreach Opportunities.

Facility:	Statewide/ Program Wide
Status:	Active
Frequency:	C-Annual
STEP Project Number:	SC000060018
Estimated Cost:	$5,000.00 Annual
Proponent:	ENV
Year Proposed:	Current

Develop Outreach Curriculum & Materials (Project # 101)

Currently the SCARNG has no standard or base curriculum or materials for outreach programs. They are developed as needed before each opportunity. This leads to an inconsistent message and gaps in the quality and the type of information that is disseminated. The creation of unique materials and curriculum for each opportunity also increases the staff's workload. This project will develop a standard set of tools & materials to be used during outreach opportunities. This project will be completed with in-house staff and equipment.

Facility:	Statewide/ Program Wide
Status:	Active
Frequency:	C-Annual
STEP Project Number:	SC000060018
Estimated Cost:	$10,000.00 Annual
Proponent:	ENV/ITAM
Year Proposed:	21

National Public Lands Day (Project # 150)

National Public Lands Day is the nation's largest hands-on volunteer effort to improve and enhance public lands and military lands open to the public for recreation.

Facility:	Statewide/ Program Wide
Status:	Planning
Frequency:	D-Annual
STEP Project Number:	GRANT
Estimated Cost:	$6,085.00 Total
Proponent:	ENV
Year Proposed:	Current

Pest: Manage Invasive/Noxious Plant Species

Implement Management activities from Invasive and Noxious Plant Management Plan (Project # 95)

Implement management activities through use of mechanical, chemical and biological control methods to reduce or eliminate invasive and noxious plant species.

Facility:	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SCC70060019
Estimated Cost	$30,000.00 Annual
Proponent	ENV/ITAM/ Facilities
Year Proposed	Current

Develop an Early Detection Rapid Response Plan for Invasive Species (Project # 158)

Develop an EDRR program in accordance with the National Invasive Species Councils guidelines that allows for immediate reaction to specific invasive species that have the potential to cause significant long-term impacts if not dealt with in a much-expedited timeline from when discovered.

Facility:	Statewide/ Program Wide
Status:	Planning
Frequency:	Defined
STEP Project Number:	SCC70060019
Estimated Cost:	$10,000.00 Total
Proponent:	-
Year Proposed:	22

Treatment of Invasive Species at the Donaldson Center (Project # 332)

Eradication of invasive/noxious species by chemical and/or manual methods.

Facility:	Statewide/ Program Wide
Status:	Planning
Frequency:	D-Annual
STEP Project Number:	SCC70060019
Estimated Cost:	$5,000.00 Annual
Proponent:	ENV
Year Proposed:	21

Treatment of Invasive Species at Fountain Inn (Project # 334)

Eradication of invasive/noxious species by chemical and/or manual methods.

Facility:	Statewide/ Program Wide
Status:	Planning
Frequency:	D-Annual
STEP Project Number:	SCC70060019
Estimated Cost:	$1,000.00 Annual
Proponent:	ENV
Year Proposed:	21

Nuisance Wildlife Pest Control (Project # 125)

Reduce Impacts from nuisance wildlife through activities such as trapping and/or relocating.

Facility:	Statewide/ Program Wide
Status:	Active
Frequency:	C-Annual
STEP Project Number:	SCC70060019
Estimated Cost:	$500.00 Annual
Proponent:	ENV
Year Proposed:	Current

Pests: Reduce the Quantity of Pesticides Applied

Tracking Pesticide usage through the IPMP (Project # 152)

Tracking the pounds of active pesticide ingredients applied on Army National Guard Land through the IPMP.

Facility	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SCC70060019
Estimated Cost	$0.00 Total
Proponent	
Year Proposed	Current

Program Management: Contribute to the National Guard Environmental Program at a National Level

National Awards Program (Project # 320)

Participate in the NGB & Army National Awards program

Facility	Statewide/ Program Wide
Status	Active
Frequency	D-Annual
STEP Project Number:	SCC70160002
Estimated Cost	$0.00
Proponent	Env
Year Proposed	Current

Environmental Advisory Council (Project # 201)

Participation on the EAC

Facility	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SCB18060003
Estimated Cost	$5,000.00 Annual
Proponent	ENV

Year Proposed	Current

EAC Meetings (Project # 328)

Facility	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SC0NG150001
Estimated Cost	$5,000.00 Annual
Proponent	-
Year Proposed	Current

Program Management: Ensure Fiscal Sustainability for the Conservation Program

NGB Data Calls (Project # 318)

Facility	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SCC70060010
Estimated Cost	$0.00
Proponent	ENV
Year Proposed	Current

Program Management: Ensure That All Planning Documents are Relevant & Current

CHTS INRMP Review for Operation and Effect (Project # 117)

This project is for the update and revision of the Clarks Hill Training Site INRMP.

Facility	Clarks Hill Training Center
Status	Active
Frequency	Multi-Year
STEP Project Number:	SC96A060002
Estimated Cost	$20,000.00 Total
Proponent	ENV
Year Proposed	25

Update ICRMP (Project # 140)

Maintain and update ICRMP.

Facility	Statewide/ Program Wide
Status	Planning
Frequency	C-Annual
STEP Project Number:	SC0NG160001
Estimated Cost	$7,500.00 Annual
Proponent	ENV
Year Proposed	23

Maintain and Update Tracking Database (Project # 143)

Maintain and Update Tracking Database. This includes database administration, report and query development, as well as data entry.

Facility	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SCC70060010
Estimated Cost	$3,000.00 Annual
Proponent	ENV
Year Proposed	Current

Update INRMPs (Project # 338)

Conduct Annual Updates and 5-year Reviews for Operation and Effect.

Facility	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SCC70060010
Estimated Cost	$27,000.00 Annual
Proponent	ENV
Year Proposed	25

Program Management: Maintain Current and Accurate Species Lists

Species Database (Project # 124)

Develop and maintain a species database. The database should be capable of housing a running species list as well as storing results from planning level surveys, monitoring activities, and incidental captures and observations.

Facility	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SCC70060014
Estimated Cost	$7,500.00 Annual
Proponent	ENV
Year Proposed	Current

Database Development and testing (Project # 169)

Facility	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SCC70160002
Estimated Cost	$7,500.00 Annual
Proponent	ENV
Year Proposed	Current

Program Management: Maintain Easy and Up-to-Date Access to All Relevant Documents

Maintain IT Systems (Project # 237)

Maintain and Upkeep of IT Systems within the Conservation office.

Facility	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SCB18060001
Estimated Cost	$10,000.00 Annual
Proponent	-
Year Proposed	Current

State Property Inventory Tracking (Project # 274)

Facility	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SCC70160002
Estimated Cost	$0.00
Proponent	-
Year Proposed	Current

Program Management: Maintain State-of-the-Art Technology

Implement IT maintenance & replacement plan (Project # 292)

The SCARNG Conservation Section operates under an IT replacement and maintenance plan. This plan details the distribution of IT assets and replacement schedules.

Facility	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SCC70160002
Estimated Cost	$8,000.00 Annual
Proponent	ENV
Year Proposed	Current

Procurement of routine office supplies (Project # 242)

This project is for the procurement of day-to-day office supplies and equipment that the staff need to successfully complete their job.

Facility	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SCB18060001
Estimated Cost	$5,000.00
Proponent	-
Year Proposed	Current

Project Management: Provide staff the tools, equipment, and supplies needed to perform their day to day work activities.

Maintain and Repair Equipment (Project # 303)

This project is for the repair, maintenance, and general upkeep of the Conservation Teams equipment.

Facility	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SCC70060019
Estimated Cost	$5,000.00 Annual
Proponent	ENV
Year Proposed	Current

Routine Admin (Project # 322)

Provide tools, equipment and supplies for routine administrative functions in support of the Conservation Program

Facility	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SCC70160002
Estimated Cost	$5,000.00 Annual
Proponent	ENV
Year Proposed	Current

Program Management: To employ a staff of subject matter experts that are innovative leaders

Staff Training (Project # 233)

This project ensures that our staff has the opportunity to receive subject matter specific training to stay current in their field and to expand their knowledge base.

Facility	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SCB18060015
Estimated Cost	$40,000.00 Annual
Proponent	ENV
Year Proposed	Current

Staff Development Training Plan (Project # 236)

The development and maintenance of individual staff development and training plans. The intent is to link these training plans to measurable objectives that can/ will lead to salary increases.

Facility	Statewide/ Program Wide
Status	Planning

Frequency	C-Annual
STEP Project Number:	SCB18060002
Estimated Cost	$0.00
Proponent	Conservation
Year Proposed	21

Mission Travel (Project # 250)

This project supports Mission related travel. This project supports other projects with the INRMP & ICRMP with travel expenses.

Facility	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SCB18060003
Estimated Cost	$35,000.00 Annual
Proponent	ENV
Year Proposed	Current

Yearly Performance Planning and Evaluation Reviews (Project # 252)

Conduct yearly performance planning and evaluation reviews as required by agency policy.

Facility	Statewide/ Program Wide
Status	Active
Frequency	D-Annual
STEP Project Number:	TBD
Estimated Cost	$0.00
Proponent	ENV
Year Proposed	Current

Soil and Water: Develop a Systemic Approach for Soil & Water Management

Develop and Update Soil Management Plan and Inventory (SMPI) (Project # 30)

This plan serves as the database of record for unimproved road condition and erosion sights on MTC. The plan contains site locations, descriptions, impact/ priority, root cause/ triggering impact, construction grade site designs with complete specs and cost estimates. Sites identified in the plan will be divide into three categories; Major, Moderate, and Routine. Once sights have been identified they will be added to INRMP Project List. The status of the site will be monitored in the INRMP. The plan is updated annually with subwatershed surveys for new problem areas. Sights in the inventory that have not been repaired are assessed annually for changes in condition. Sights that have been repaired are monitored annually for three years with recommendations for site maintenance.

Facility	Statewide/ Program-Wide
Status	Planning
Frequency	Multi-Year
STEP Project Number:	SCC70060009
Estimated Cost	$60,000.00 Annual
Proponent	ENV

Year Proposed	22

Conduct SMPI Planning & Coordination Meetings (Project # 32)

Stakeholders will meet bi-annually at a minimum. The purpose of the first meeting is twofold; first determine which sites from plan will be remediated and determine who will be the project proponent, second to determine design prepotency for newly identified sites. This determination will be based on actual current year available dollars, not on projected out year budgets. The second and proceeding meetings in a given year will be to track progress and to apprise other stakeholders of any changes from the first meeting. After individual projects are selected for remediation by the stakeholders those projects will be updated in the INRMP. Based on these selections from the yearly planning meeting stakeholders will remediate the agreed to sites in accordance with the SMPI design. Stakeholders will track all remediation cost and report them back to the Environmental Conservation Office for inclusion into the yearly SMPI and INRMP updates. Implementation of the designs in the SMPI is crucial to meeting the stated goal of reduced soil loss.

Facility	Statewide/ Program Wide
Status	Active
Frequency	Multi-Year
STEP Project Number:	SCC70060009
Estimated Cost	$0.00
Proponent	Facilities, ITAM, ENV
Year Proposed	Current

Open Area Stabilization and Maintenance (Project # 247)

Stabilize and maintain open areas that area susceptible to erosion and runoff ex: right of way, fields, logging deck, etc.

Facility	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SCC70060009
Estimated Cost	$5,000.00 Annual
Proponent	-
Year Proposed	Current

Soil & Water: Erosion Repair Site Monitoring & Evaluation

Soil Management Site Cataloging at CHT (Project # 339)

This plan serves as the database of record for unimproved road condition and erosion sites. The plan contains site locations, descriptions, impact/ priority, annual estimated soil loss, root cause/ triggering impact, and cost estimates for repair. Sites identified in the plan will be divide into three categories; major, Moderate, and Routine. Once sights have been identified they will be added to INRMP Project List. The status of the site will be tracked monitored in the INRMP. The plan is updated annually with sub-watershed surveys for new problem areas. Sights in the inventory that have not been repaired are assessed annually for changes in condition. Sights that have been repaired are monitored annually for three years with recommendations.

Facility	Statewide/ Program Wide
Status	Active
Frequency	Multi-Year
STEP Project Number:	SC96A060001
Estimated Cost	$15,000.00 Annual
Proponent	ENV
Year Proposed	21

Follow up surveys for all remediated erosion sites (Project # 71)

This survey is to assess and monitor the condition of remediated erosion sites as it pertains to soil erosion and stormwater management.

Facility	Statewide/ Program Wide
Status	Active
Frequency	D-Annual
STEP Project Number:	SCC70060009
Estimated Cost	$6,500.00 Annual
Proponent	ENV
Year Proposed	Current

Special Status Species: Special Status Species (SSS) Habitat Management

Monitoring Interaction between Military training and T&E habitat types (Project # 82)

Develop procedure to evaluate training activities occurring in each T&E habitat type that may have an impact on protected species.

Facility	Statewide/ Program Wide
Status	Active
Frequency	Defined
STEP Project Number:	SCC70060008
Estimated Cost	$7,500.00 Annual
Proponent	ENV/ITAM
Year Proposed	Current

T & E Habitat Mapping (Project # 80)

Develop habitat maps outlining areas of potential Threatened and Endangered species occurring on SCARNG properties. This data will be used to focus future T&E surveys, and as a guide to make biologically sound management decisions. This is a state-wide effort for SCARNG to develop habitat potential maps.

Facility	Statewide/ Program Wide
Status	Planning
Frequency	Defined
STEP Project Number:	SC000060010
Estimated Cost	$7,500.00 Total
Proponent	ENV

Year Proposed	21

T&E Species Awareness (Project # 83)

Develop training material for trainers and soldiers to educate them on the importance and the penalties associated with T&E laws and regulations as they affect SCARNG and the military mission.

Facility	Statewide/ Program Wide
Status	Active
Frequency	C-Annual
STEP Project Number:	SCC70060008
Estimated Cost	$20,000.00 Annual
Proponent	ENV
Year Proposed	Current

Special Status Species Habitat Mapping (Project # 85)

Develop habitat maps outlining areas of potential Special Status Species occurring on SCARNG properties. This data will be used to focus future surveys, and as a guide to make biologically sound management decisions. This is a larger state-wide effort for SCARNG to develop habitat potential maps and will be incorporated into the T&E habitat mapping project if possible.

Facility	Statewide/ Program Wide
Status	Planning
Frequency	Defined
STEP Project Number:	SC000060010
Estimated Cost	$7,500.00 Total
Proponent	ENV
Year Proposed	21

Special Status Species PL Surveys (Project # 86)

Completion of Planning Surveys that identify locations of Special Status Species on SCARNG Properties. This data will be used to focus future studies, and as a guide to make biologically sound management decisions.

Facility	Statewide/ Program Wide
Status	Active
Frequency	Multi-Year
STEP Project Number:	SCC70060014
Estimated Cost	$10,700.00 Annual
Proponent	ENV
Year Proposed	Current

Special Species Habitat Management (Project # 304)

This project is for the active and adaptive management of special status species.

Facility	Statewide/ Program Wide
Status	Active

Frequency	C-Annual
STEP Project Number:	SCC70060008
Estimated Cost	$50,000.00 Annual
Proponent	Env
Year Proposed	Current

Special Status Species: Special Status Species Monitoring

Special Species Planning Level Survey Update (Project # 269)

Update of the Special Status Species at SCARNG Training Centers. This includes T&E, Candidate, state listed and invasives.

Facility	Statewide/ Program Wide
Status	Planning
Frequency	Multi-Year
STEP Project Number:	SCC70060015
Estimated Cost	$20,000.00 Total
Proponent	ENV
Year Proposed	Current

Special Status Species PL Surveys CHT (Project # 311)

Completion of Planning Surveys that identify locations of Special Status Species at the CHT. This data will be used to focus future studies, and as a guide to make biologically sound management decisions.

Facility	Clarks Hill Training Center
Status	Planning
Frequency	Multi-Year
STEP Project Number:	SC96A160001
Estimated Cost	$25,000.00 Total
Proponent	ENV-Conservation
Year Proposed	21

PLS for T&E at CHT (Project # 312)

Conduct PLS at CHT for "Special Status" species to include T&E and candidate species.

Facility	Clarks Hill Training Center
Status	Planning
Frequency	Multi-Year
STEP Project Number:	SC96A160001
Estimated Cost	$25,000.00 Total
Proponent	ENV-Conservation
Year Proposed	22

Wetlands: Sustain or Enhance Wetland Systems

Develop a Wetlands Monitoring Protocol (Project # 3)

Design a monitoring protocol that will measure and track the relative health of the wetland systems on MTC. The final design will need to be one that can be implemented cost effectively and maintained with in-house staff.

Facility	Statewide/ Program Wide
Status	Planning
Frequency	Multi-Year
STEP Project Number:	SCC70060005
Estimated Cost	$15,000.00 Total
Proponent	ENV
Year Proposed	21

Routine Wetlands Management CHT (Project # 343)

Implementation of routine wetlands management projects at CHTC

Facility	Clarks Hill Training Center
Status	Planning
Frequency	C-Annual
STEP Project Number:	SC96A060006
Estimated Cost	$15,000.00 Annual
Proponent	-
Year Proposed	21

Wetlands Flora and Fauna Guidelines (Project # 5)

Develop guidelines for management of sensitive species, including protection, propagation and research on the health and stability of the species.

Facility	Statewide/ Program Wide
Status	Planning
Frequency	Multi-Year
STEP Project Number:	SCC70060005
Estimated Cost	$15,000.00 Total
Proponent	ENV
Year Proposed	21

Implementation a Wetlands Monitoring Protocol (Project # 115)

Implement the monitoring protocol developing project 3.

Facility	Statewide/ Program Wide
Status	Planning
Frequency	C-Annual
STEP Project Number:	SCC70060017
Estimated Cost	$13,000.00 Annual
Proponent	ENV
Year Proposed	22

Wetland and Wetland Plant Community Survey and Mapping (Project # 323)

All wetlands (as defined by the USACE) present on SCARNG Training Centers will be inventoried in the field and geolocated using GPS. Maps will be made of all wetland communities and an accompanying text will discuss the botanical, ecological, hydrological, and strategic value of each wetland and wetland community type. The rarity of each wetland type and the management of wetlands on the site will also be discussed in the text.

Facility	Statewide/ Program Wide
Status	Planning
Frequency	Defined
STEP Project Number:	SCC70060016
Estimated Cost	$25,000.00 Total
Proponent	Env
Year Proposed	21

Monitor Wetland Conditions (Project # 327)

Facility	Statewide/ Program Wide
Status	Active
Frequency	Multi-Year
STEP Project Number:	SCC70060005
Estimated Cost	$10,000.00
Proponent	ENV
Year Proposed	Current

D. Species Lists

The following tables present the species documented on CHTC through 2022, based on multiple surveys and reports (see Appendix H for a full list of relevant reports and data). The SCARNG maintains all observations in a database and updates observations as needed.

Table D-1. Plant Species Documented on Clarks Hill Training Center.

GENUS	SPECIES	COMMON NAME	NOTES
Acer	*rubrum*	red maple	
Aesculus	*sylvatica*	dwarf buckeye	
Agrostic	*hyemalis*	bent grass	
Allium	*bivalve*	False garlic	
Alnus	*serrulata*	tag alder	
Amelancier	*arborea*	Serviceberry	
Amorpha	*herbacea*	dwarf indigo bush	
Ampelopsis	*arborea*	sweet pepper vine	
Andropogon	*scoparius*	little bluestem	
Andropogon	*virginicus*	broomsedge	
Antennaria	*plantaginifolia*	Pussy-toes	
Apios	*americana*	ground nut	
Aralia	*spinosa*	Hercules club	
Aristida	*beyrichiana*	southern wiregrass	
Aristolochia	*serpentaria*	Turpentine root, Virginia snakeroot	
Arundinaria	*gigantea*	cane	
Asimina	*parviflora*	dwarf pawpaw	
Asimina	*triloba*	Pawpaw	
Asplenium	*platyneuron*	Ebony spleenwort	
Aster	*spp.*	aster	
Athyrium	*asplenoides*	southern lady fern	
Baccharis	*halimifolia*	baccharis	
Berchemia	*scandens*	rattanvine	
Bignonia	*capreolata*	cross vine	
Botrychium	*dissectum*	rattlesnake fern)	
Bromus	*catharticus*	brome grass	
Callicarpa	*americana*	French mulberry, Beauty-berry	
Calycanthus	*floridus*	sweetshrub	
Campsis	*radicans*	Trumpet-creeper, Cow-itch vine	
Carex	*complanata*	sedge	
Carex	*crinita*	fringed sedge	
Carex	*flaccosperma*	sedge	
Carex	*lupulina*	hop sedge	
Carex	*lurida*	shallow sedge	
Carex	*nigromarginata*	lack-edged sedge	
Carex	*scoparia*	pointed broomsedge	
Carex	*striatula*	striated sedge	

Table D-1. Plant Species Documented on Clarks Hill Training Center.			
GENUS	**SPECIES**	**COMMON NAME**	**NOTES**
Carphephorous	*spp.*		
Carpinus	*carolininana*	hop hornbeam	
Carya	*glabra*	Pignut hickory	
Carya	*ovata*	shagbark hickory	
Carya	*tomentosa*	Mockernut hickory	
Cassia	*nictitans*	wild sensitive plant	
Ceanothus	*americanus*	New Jersey tea	
Celtis	*laevigata*	Sugarberry, Hackberry	
Celtis	*occidentalis var. georgiana*	Georgia Sugarberry, Georgia Hackberry	
Cephalanthus	*occidentalis*	buttonbush	
Cercis	*canadensis*	redbud	
Chimaphala	*maculata*	Spotted wintergreen, Pipsissewa	
Chionanthus	*virginicus*	fringe tree	
Chrysopsis	*gossypina*	wooly goldenaster	
Chrysopsis	*spp.*	goldenaster	
Cimicifuga	*racemosa*	Black cohosh	
Cocculus	*carolinus*	moonseed	
Commelina	*erecta*	Dayflower	
Coreopsis	*major*	tickseed	
Coreopsis	*verticillata*	verticillate tickseed	
Cornus florida	*florida*	Flowering dogwood	
Crataegus	*phaenopyrum*	Hawthorn	
Crotalaria	*angulata*	angled rattlebox	
Cyperus	*pseudovegetus*		
Dactylon	*sp.*	orchard grass	
Danthonia	*spicata*	oat grass	
Decumaria	*barbara*	climbing hydrangea	
Desmodium	*glabellum*	beggar-ticks/ beggar- lice	
Desmodium	*laevigatum*	beggar-ticks/ beggar- lice	
Desmodium	*lineatum*	Matted tick-trefoil	
Desmodium	*paniculatum*	paniculate beggar-ticks	
Desmodium	*rotundifolium*	Roundleaf tick-trefoil	
Desmodium	*virginianum*	Virginia beggar-ticks	
Desmodium	*vridiflorum*	grayish beggar-ticks	
Dicanthelium	*acuminatum*	wooly witch grass	
Dicanthelium	*angustifolium*	narrow-leaved witch grass	
Dicanthelium	*boscii*	Bosc's panic grass)	
Dicanthelium	*dichotomum*	forked witch grass	
Dicanthelium	*laxiflorum*	open-flowered witch grass	
Dicanthelium	*meridionale*	matting witch grass	
Dicanthelium	*ravenelii*	Ravenel's witch grass	
Dicanthelium	*scoparium*	velvet witch grass	
Dicanthelium	*tenue*	white-edged witch grass	
Dioscorea	*villosa*	Wild yam	

Table D-1. Plant Species Documented on Clarks Hill Training Center.			
GENUS	**SPECIES**	**COMMON NAME**	**NOTES**
Dioscorea	*batatas*	Cinnamon vine	
Diospyros	*virginiana*	Persimmon	
Duchesnea	*indica*	Indian strawberry	
Eleocharis	*microcarpa*	small-seeded spikerush	
Eleocharis	*parvula*	dwarf spikerush	
Elephantopus	*carolinianus*	Carolina elephant's-foot	
Elephantopus	*tomentosus*	Elephant's foot	
Elymus	*virginicus*	Virginia elymus	
Eragrostis	*spectabilis*	love grass	
Erianthus	*sp.*	plume grass	
Eryngium	*prostratum*	creeping eryngo	
Euonymous	*americanus*	Strawberry-bush/ hearts-a-busting	
Eupatorium	*capillifolium*	Common dog-fennel	
Eupatorium	*glaucascens*	Wedgeleaf Eupatorium, Broadleaf bushy Eupatorium	
Eupatorium	*hyssopifolium*	Hyssopleaf Eupatorium	
Eupatorium	*purpureum*	Joe-pye weed	
Eupatorium	*serotinum*	late thoroughwort	
Euphorbia	*corollata*	spurge	
Euthamia	*tenuifolia*	narrow-leaved goldenrod	
Fagus	*grandifolia*	American beech	
Festuca	***eliator***	**fescue**	**non-native**
Fraxinus	*americana*	White ash	
Fraxinus	*pensylvanica*	green ash	
Galium	*circaezans*	Piedmont bedstraw	
Gaylussacia	*dumosa*	Dwarf Huckleberry	
Gelsemium	*sempervirens*	Yellow jessamine	
Gnaphalium	*obtusifolium*	Rabbit tobacco	
Goodyera	*pubescens*	Downy rattlesnake plantain	
Helianthus	*atrorubens*	red-leaved sunflower	
Helianthus	*divaricatus*	spreading sunflower	
Helianthus	*microcephalus*	small-headed sunflower	
Helianthus	*spp.*	Sunflower	
Heterotheca	*graminifolia*	grass-leaved golden aster	
Heterotheca	*mariana*	Maryland golden aster	
Hexastylis	*arifolia*	Wild ginger/ Commo heartleaf	
Hieracium	*gronovii*	Hawkweed	
Hieracium	*venosum*	rattlesnake weed	
Houstonia	*longifolia*	narrow-leaved houstonia	
Hypericum	*hypericoides*	St. Andrew's Cross/ St. Johnswort	
Hypericum	*mutilum*	dwarf St. Johnswort	
Ilex	*decidua*	Possum haw	
Ilex	*longpipes*	Georgia holly	
Ilex	*opaca*	American holly	
Ipomaea	*pandurata*	wild man of the earth	

Table D-1. Plant Species Documented on Clarks Hill Training Center.			
GENUS	**SPECIES**	**COMMON NAME**	**NOTES**
Juglans	*nigra*	Black walnut	
Juncus	*coriaceous*	tough needlerush	
Juncus	*effusus*	common needlerush	
Juniperus	*virginiana*	Eastern redcedar	
Krigia	*virginica*	Virginia dwarf-dandelion	
Lactuca	*graminifolia*	grass-leaved lettuce	
Leersia	*oryzoides*	rice cutgrass	
Leersia	*virginica*	Virginia cutgrass	
Lespedeza	***cuneata***	**Sericea Lespedeza**	**non-native**
Lespedeza	*hirta*	Hairy Lespedeza	
Lespedeza	*repens*	Smooth trailing/ creeping Lespedeza	
Lespedeza	*spp.*	Bush-clover	
Lespedeza	***stipulacea***	**Korean clover (LLN)**	**non-native**
Lespedeza	***striata***	**Japanese clover**	**non-native**
Lespedeza	*stuvei*	Velvety Lespedeza	
Lespedeza	*virginica*	Virginia lespedeza	
Lespedeza	*intermedia*	Wand Lespedeza	
Ligustrum	***sinense***	**Chinese privet**	**non-native**
Liquidambar	*styraciflua*	Sweetgum	
Liriodendron	*styraciflua*	tulip poplar	
Lobelia	*nuttallii*	Nuttall's Lobelia	
Lonicera	***japonica***	**Japanese honeysucke**	**non-native**
Lonicera	*sempervirens*	Coral honeysuckle	
Ludwigia	*alternifolia*	alternate-leaved seedbox	
Ludwigia	*repens*	creeping seedbox	
Ludwigia	*sp.*	large ludwigia	
Ludwigia	***uraguayensis***	**Uraguayan waterprimrose**	**non-native**
Luzula	*echinata*	wood rush	
Magnolia	*acuminate*	cucumber tree	
Melia	***azedarach***	**Chinaberry tree**	**non-native**
Microstegium	***vimineum***	**Japanese shade grass**	**non-native**
Mitchella	*repens*	Partridgeberry	
Morus	*rubra*	red mulberry	
Nyssa	*sylvatica*	Black gum	
Opuntia	*compressa*	Prickly pear cactus	
Ostrya	*viginiana*	Hop Hornbeam	
Oxalis	*dillenii*	yellow wood sorrel	
Oxalis	*violacea*	violet wood sorrel	
Oxydendrum	*arboreum*	Sourwood	
Panic	*anceps*	beaked panic grass	
Panicum	*dichotomiflorum*	fall panicum	
Panicum	*sp.*	panic grass	
Parthenocissus	*quinquefolia*	Virginia creeper	
Paspalum	*dilatatum*	dallis grass	

Table D-1. Plant Species Documented on Clarks Hill Training Center.			
GENUS	**SPECIES**	**COMMON NAME**	**NOTES**
Passiflora	*lutea*	yellow passion vine	
Pinus	*echinata*	shortleaf pine	
Pinus	*taeda*	Loblolly pine	
Platanus	*occidentalis*	American sycamore	
Pluchea	*camphorata*	pluchea	
Polygonum	*sagittatum*	tear-thumb	
Polygonum	*sp.*	smartweed	
Polypremum	*procumbens*	polypremum	
Polystichum	*acrostichoides*	Christmas fern	
Potentilla	*canadensis*	Five-fingers	
Prenanthes	*trifoliata*	gall-of-the-earth	
Prunella	***vulgaris***	**heal-all**	**non-native**
Prunus	*serotina*	Black cherry	
Psoralea	*psoraloides*	Sampson snake-root	
Pyrus	*communis*	Common pear	
Quercus	*alba*	White oak	
Quercus	*coccinea*	Scarlet oak	
Quercus	*falcata*	Southern red oak	
Quercus	*imbricaria*	Shingle Oak	
Quercus	*laurifolia*	Laurel oak	
Quercus	*marilandica*	Black jack oak	
Quercus	*nigra*	Water oak	
Quercus	*phellos*	Willow oak	
Quercus	*rubra*	Northern red oak	
Quercus	*shumardii*	Shumard oak	
Quercus	*stellata*	Post oak	
Quercus	*velutina*	Black oak	
Ranunculus	*pusillus*	weak buttercup	
Rhexia	*virginica*	Virginia meadow-beauty	
Rhododendron	*canescens*	hairy wild azalea	
Rhus	*copallina*	Winged sumac	
Rhus	*glabra*	Smooth Sumac	
Rhus	*radicans*	Poison ivy	
Rhus	*toxicodendron*	Poison oak	
Rhynchospora	*grayi*	Gray's beakrush	
Robinia	*pseudoacacia*	black locust	
Robinia	*sp.*	bristly locust	
Rosa	*multiflora*	multiflora rose	
Rubus	*canadensis*	Canada blackberry	
Rubus	*spp.*	Blackberry	
Rubus	*cuneifolius*	Sand blackberry	
Ruellia	*caroliniensis*	wild petunia	
Sabal	*minor*	dwarf palmetto	
Salix	*nigra*	black willow	

Table D-1. Plant Species Documented on Clarks Hill Training Center.			
GENUS	**SPECIES**	**COMMON NAME**	**NOTES**
Sambucus	*canadensis*	elderberry	
Sanicula	*sp.*	snakeroot	
Sassafras	*albidum*	Sassafras	
Scirpus	*atrovirens*	bulrush	
Scirpus	*cyperinus*	woolgrass bulrush	
Scleria	*reticularis*	netted nut rush	
Scleria	*triglomerata*	nut rush	
Scutellaria	*integrifolia*	smooth-leaved skullcap	
Scutellaria	***parvula***	**dwarfed skullcap**	**state species of concern**
Senecio	*anonymus*	Small's ragwort	
Sisyrinchium	*sp*	blue-eyed grass	
Smilax	*bona-nox*	Catbriar	
Smilax	*glauca*	White Greenbriar	
Smilax	*rotundifolia*	Round-leaved Greenbriar	
Smilax	*smallii*	Small's Greenriar,	
Smilax	*tamniodes*	hispid catbrier	
Solanum	*spp.*	Horse-nettle, Bell-nettle, Nightshade	
Solidago	*odora*	Licorice/ Fragrant goldenrod	
Sorghastrum	*nutans*	Indian grass	
Spiranthes	*cernua*	nodding ladies-tresses	
Sporobolus	*junceus*	Sandhills dropseed	
Stipa	*avenacea*	needle grass	
Stylosanthes	*biflora*	Pencil flower	
Symphyotrichum	*georgianum*	Georgia aster	
Thalictrum	*revolutum*	Waxyleaf Meadow-rue	
Tillandsia	*uneoides*	Spanish moss	
Tipularia	*discolor*	Crane-fly orchid	
Trachelospermum	*difforme*	climbing dogbane	
Tragia	*urticifolia*	nettle-leaved tragia	
Trifolium	*repens*	White clover	
Typha	*latifolia*	cattail	
Ulmus	*alata*	Winged elm	
Ulmus	*americana*	American elm	
Uniola	*laxa*	tall oat-grass	
Vaccinium	*arboreum*	Sparkleberry	
Vaccinium	*elliottii*	Elliott's blueberry	
Vaccinium	*spp.*	blueberry	
Vaccinium	*stamineum*	Common deerberry/ Squawberry	
Vaccinium	*stamineum var. stamineum*	Deerberry	
Vaccinium	*vacillans*	Lowbush blueberry	
Verbesina	*occidentalis*	chaffseed	
Vernonia	*noveboracensis*	Ironweed	
Viburnum	*prunifolium*	black haw	

Table D-1. Plant Species Documented on Clarks Hill Training Center.			
GENUS	**SPECIES**	**COMMON NAME**	**NOTES**
Viburnum	*rifidulum*	Blue/ Rusty haw	
Viola	*papilionacea*	Common blue violet	
Viola	*spp.*	Violet, Pansy	
Vitis	*rotundifolia*	Muscadine/ Wild grape	

Table D-2. Bird Species Documented on Clarks Hill Training Center.			
GENUS	**SPECIES**	**COMMON_NAME**	**NOTES**
Cardinalis	*cardinalis*	Northern cardinal	
Carduelis	*tristis*	American goldfinch	
Colaptes	*auratus*	Northern flicker	
Corvus	*brachyrhynchos*	American crow	
Corvus	*ossifragus*	Fish crow	
Cyanocitta	*cristata*	Blue jay	
Dendroica	*caerulrscens*	Black-throated Blue Warbler	
Dendroica	*coronate*	Yellow-rumped warbler	
Dendroica	*discolor*	Prairie warbler	
Dendroica	*dominica*	Yellow-throated warbler	
Dendroica	*pinus*	Pine warbler	
Dryocopus	*pileatus*	Pileated woodpecker	
Dumetella	*carolinensis*	Gray Catbird	
Empidonax	*virescens*	Acadian flycatcher	
Geothlypis	*trichas*	Common yellowthroat	
Guiraca	*caerulea*	Blue grosbeak	
Haliaeetus	***leucocephalus***	**Bald eagle**	**BGEPA, state threatened**
Hirundo	*rustica*	Barn swallow	
Hylocichla	*mustelina*	Wood thrush	
Icteria	*virens*	Yellow-breasted chat	
Icterus	*spurious*	Orchard Oriole	
Melanerpes	*carolinus*	Red-bellied woodpecker	
Melanerpes	*erythrocephalus*	Red-headed woodpecker	
Meleagris	*gallopavo*	Eastern wild turkey	
Mniotilta	*varia*	Black and white warbler	
Molothrus	*ater*	Brown-headed cowbird	
Myiarchus	*crinitus*	Great crested flycatcher	
Parula	*americana*	Northern Parula	
Parus	*bicolor*	Tufted titmouse	
Parus	*carolinensis*	Carolina chickadee	
Passerina	*cyanea*	Indigo bunting	
Picoides	*pubescens*	Downy woodpecker	
Pipilo	*erythropthalmus*	Eastern Towhee	
Piranga	*olivacea*	Scarlet Tanager	
Piranga	*rubra*	Summer tanager	
Polioptila	*caerulea*	Blue-gray gnatcatcher	
Progne	*subis*	Purple martin	

Table D-2. Bird Species Documented on Clarks Hill Training Center.			
GENUS	**SPECIES**	**COMMON_NAME**	**NOTES**
Quiscalus	*quiscula*	Common grackle	
Regulus	*calendula*	Ruby-crowned kinglet	
Sayornis	*phoebe*	Eastern phoebe	
Seiurus	*aurocapillus*	Ovenbird	
Setophaga	*ruticilla*	American redstart	
Sialia	*sialis*	Eastern bluebird	
Sitta	*pusilla*	Brown-headed nuthatch	
Spizella	*passerina*	Chipping sparrow	
Thryothorus	*ludovicianus*	Carolina wren	
Troglodytes	*aedon*	House wren	
Turdus	*migratorius*	American robin	
Tyrannus	*tyrannus*	Eastern kingbird	
Vireo	*flavifrons*	Yellow-throated vireo	
Vireo	*griseus*	White-eyed vireo	
Vireo	*olivaceus*	Red-eyed vireo	
Wilsonia	*citrina*	Hooded warbler	
Zenaida	*macroura*	Mourning dove	

Table D-3. Mammal Species Documented on Clarks Hill Training Center.			
GENUS	**SPECIES**	**COMMON NAME**	**NOTES**
Blarina	*carolinensis*	Southern short-tailed shrew	
Canis	***familiaris***	**Dog**	**non-native**
Castor	*canadensis*	Beaver	
Didelphis	*marsupialis*	opposum	
Eptesicus	*fuscus*	Big brown bat	
Lasiurus	*borealis*	Eastern red bat	
Lasiurus	*seminolus*	Seminole bat	
Lutra	*canadensis*	River Otter	
Lynx	*rufus*	Bobcat	
Mephitis	*mephitis*	Striped skunk	
Microtus	*pinetorum*	Pine vole	
Mus	***musculus***	**House Mouse**	**non-native**
Ochrotomys	*nuttalli*	Golden mouse	
Odocoileus	*virginianus*	White-tailed Deer	
Perimyotis	***subflavus***	**Tri-colored bat**	**federal at-risk-species**
Peromyscus	*polionotus*	Oldfield mouse	
Procyon	*lotor*	Raccoon	
Reithrodontomys	*humulis*	Eastern harvest mouse	
Sciurus	*carolinensis*	Eastern Gray Squirrel	
Sciurus	*niger*	Fox Squirrel	
Sorex	*longirostris*	Southeastern shrew	
Sylvilagus	*floridanus*	Eastern cottontail rabbit	
Urocyon	*cinereoargenteus*	Gray Fox	

Table D-4. Amphibian and Reptile Species Documented on Clarks Hill Training Center.			
GENUS	**SPECIES**	**COMMON NAME**	**NOTES**
Acris	*c. crepitans*	Northern Cricket Frog	
Acris	*gryllus*	Marbeled Salmander	
Ambystoma	*talpoideum*	Mole Slamander	
Ambystomma	*maculatum*	Spotted Salamander	
Anolis	*carolinensis*	Green Anole	
Apalone	*spinifera aspera*	Gulf Coast Spiny Softshell Turtle	
Bufo	*woodhousii fowleri*	Fowler's Toad	
Caluber	*contrictor*	Black Racer	
Carphophis	*amoenus*	Worm Snake	
Chelydra	*serpentina*	Snapping Turtle	
Elaphe	*obseleta*	Black Rat Snake	
Eumeces	*inexpectatus*	Southeastern Five-lined Skink	
Eumeces	*laticeps*	Broadheaded Skink	
Gastrophyryne	*carolinensis*	Eastern Narrow-mouthed Toad	
Hemidactylus	*scutatum*	Four-toed Salmander	
Hyla	*versicolor*	Gray Treefrog	
Kinosternon	*subrubrum*	Eastern Mud Turtle	
Lampropeltis	*getula*	Eastern King Snake	
Notophthalmus	*viridescens*	Red Spotted Newt	
Plethodon	*glutinosus*	Slimy Salamander	
Pseudacris	*triseriata feriarum*	Upland Chorus Frog	
Lithobates	*catesbeiana*	American Bullfrog	
Sceloporus	*undulatus*	Eastern Fence Lizard	
Scincella	*lateralis*	Ground Skink	
Sistrurus	*miliarius miliarus*	Carolina Pigmy Rattlesnake	
Storeria	*occipitomaculata*	Redbelly Snake	
Tantilla	*coronata*	Southeastern Crowned Snake	
Terrapene	*carolina*	Eastern Box Turtle	
Thamnophis	*sirtalis sirtalis*	Easter Garter Snake	
Virgina	*valeriae*	Smooth Earth Snake	

Table D-5. Fish Species Documented on Clarks Hill Training Center.			
GENUS	**SPECIES**	**COMMON NAME**	**NOTES**
Lepomis	*auritus*	Redbreast Sunfish	
Lepomis	*macrochirus*	Bluegill	
Lepomis	*marginatus*	Dollar Sunfish	
Micropterus	*salmoides*	Largemouth Bass	

E. Special Status Species Management

E.1 Special Status Animals

This section summarizes those special status animal species that are either documented to occur or have the potential to occur on CHTC. Other than bald eagles, there are currently no federally protected species known to occur on CHTC. Following the summary presented in Table E-1, a summary by species is provided regarding management recommendations for these species, if found on CHTC.

Table E-1. Potential Special Status Animal Species for Clarks Hill Training Center.

Species	Status (S Rank)	Notes	Status on CHTC
Mammals			
Tri-colored bat *Perimyotis subflavus*	ARS (S1S2)	Found statewide and utilize T-beam bridges, buildings, mines, tunnels, caves, and hollow trees for roosts. First diagnosed case of WNS in South Carolina in this species was in 2013. .	Documented
Southern fox squirrel *Sciurus niger*	SC (S3S4)	Strongly associated with mature pine forests and mature pine-hardwood forests and prefer open herbaceous understory and patchy shrub cover.	Documented
Birds			
Bald eagle *Haliaeetus leucocephalus*	BGEPA ST (S2)	Wide variety of habitats that provide suitable nest sites close to open water. Nests may be placed in snags or large live trees as well as on constructed platforms or utility poles. They are resident (stay year round) as long as there is open water where they can forage. Bald eagles in South Carolina are smaller than their northern counterparts	Documented
American wood stork *Mycteria Americana*	FT SE (S1S2)	Often seen walking slowly through marshes while foraging. Nests are typically located on trees surrounded by water, such as in cypress swamps, shallow creeks, and impoundments.	Unlikely, No Suitable Habitat
Red-cockaded woodpecker *Picoides borealis*	FE SE (S2)	Mature pine forests, with an age of 60 years or greater, that lack a hardwood understory. Reside in clans and dig nest cavity in living tree. Nesting occurs in spring, from late April through May.	Unlikely, No Suitable Habitat
Amphibians			
Eastern tiger salamander *Ambystoma tigrinum tigrinum*	SC (S2S3)	Tiger salamanders are usually found in temporary and permanent ponds that are open and grassy.	Additional Surveys Needed

Table E-1. Potential Special Status Animal Species for Clarks Hill Training Center.			
Species	**Status (S Rank)**	**Notes**	**Status on CHTC**
Webster's salamander *Plethodon websteri*	SE (S2)	Found in moist, mixed hardwood forests on steep north-facing slopes with abundant debris or rocky material.	Additional Surveys Needed
Insects			
Monarch butterfly *Danaus plexippus*	ARS (SNR)	Open fields and meadows with milkweed.	Additional Surveys Needed
Septima's clubtail *Gomphus septimal*	ARS (SNR)	Breeding occurs in clean, cold, fast-running rivers.	Unlikely, No Suitable Habitat
Mollusks			
Brook floater *Alasmidonta varicose*	ARS SC (SNR)	Savannah River basin in South Carolina. Found in high-relief streams among boulders and sand.	Unlikely, No Suitable Habitat
Gravel elimia *Elimia catenaria*	SC (SNR)	Found in freshwater rivers and streams with cobble bottoms.	Unlikely, No Suitable Habitat
Carolina Lance-Atlantic Spike complex *Elliptio "angustata-producta"* complex	SC (S3)	Found in streams and rivers with limited turbulence with sandy or rocky bottom.	Unlikely, No Suitable Habitat
Carolina heelsplitter *Lasmigona decorate*	FE, CH SE (S1)	Although it was once found in large rivers and streams, the Carolina heelsplitter is now restricted to cool, clean, shallow, heavily shaded streams with stable streambanks with pool, riffle and run sequences. Does not tolerate low-quality streams.	Unlikely, No Suitable Habitat
Creeper *Strophitus undulates*	SC (S2)	Found in a variety of freshwater habitats.	Additional Surveys Needed
Eastern creekshell *Villosa delumbis*	SC (S4)	Found in deep muddy flock but can also be found in sand and boulder fields. It is most often close to the bank of streams and rivers among tree roots.	Additional Surveys Needed
Fish			
Blueback herring *Alosa aestivalis**	ARS (SNR)	Travels upstream in the Coastal Plain to spawn. In South Carolina it spawns on the Savannah River and Thurmond reservoir.	Unlikely – no suitable habitat
Christmas darter *Etheostoma hopkinsi*	SC (S4)	Inhabits gravel or rubble riffles in cool water springs, creeks, and sm all- to medium-sized rivers where stronger currents exist.	Unlikely, No Suitable Habitat

Table E-1. Potential Special Status Animal Species for Clarks Hill Training Center.			
Species	**Status (S Rank)**	**Notes**	**Status on CHTC**
Sources: USFWS McCormick County list; South Carolina Department of Natural Resources Rare, Threatened, and Endangered Species of South Carolina for McCormick County (2019). FE=federally endangered, FT=federally threatened; ARS = USFWS has been petitioned to list the species and a positive 90-day finding has been issued (listing may be warranted); information provided only for conservation actions as no federal protections currently exist. SE=state endangered, ST=state threatened, SC = state species of special concern (S1, S2, S3 all indicate state Species of Conservation Concern) S RANK: The priority assigned by SCDNR based upon the element's status within the state. S1 = critically imperiled in the state because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extirpation in the state. S2 = imperiled in state because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extirpation from the state. S3 = rare or uncommon in state (on the order of 21 to 100 occurrences). S4 = apparently secure in state, with many occurrences. SNR = not ranked at state level			

E.1.1 Documented Animal Species

The following are management recommendations for species confirmed as occurring on CHTC. Species descriptions and background information is maintained by SCARNG in a centralized location.

Tri-colored bat

1. Identify, protect, and provide new and/or existing roosts/colonies.
2. Continue population inventory and monitoring surveys.
3. Maintain and/or contribute to a bat database.
4. Monitor and mitigate threats such as WNS, pesticide contamination, anthropologic disturbance, invasive species, etc.
5. Identify, protect, and enhance bat habitat and drinking resources
6. Conduct further research into species.
7. Provide education and outreach.

Bald eagle

1. Maintaining current regulations/statutes
2. Protect nest/roost/foraging sites and communal areas
3. Limit disturbance: human development; construction; timber operations/ forestry; off-road vehicle use; motorized watercraft use; non-motorized recreation and human entry; helicopters and fixed-wing aircraft; blasting other loud, intermittent noise
4. Limit disturbance at foraging sites
5. Only use federal and state approved pesticides, herbicides, fertilizers, and other chemicals
6. Monitor and minimize contaminants/pollution/hazardous waste.

E.1.2 Potential Animal Species

The following are management recommendations for species with some potential to occur on CHTC, but not yet confirmed. See Table E-1 for more information about their likelihood on CHTC. Species descriptions and background information is maintained by SCARNG in a centralized location.

American wood stork

1. Conduct aerial surveys annually to locate new Wood Stork nesting colonies and to determine which colonies should be visited from the ground.
2. Conduct complete ground counts of Wood Stork nests at colony sites in South Carolina each year.
3. Provide permitting agencies with current information on Wood Stork colonies by updating distribution maps every year.
4. Monitor a sample of nests each year to quantify nesting success.
5. Determine survivorship of fledgling, immature, and adult Wood Storks using mark and recapture (band re-sighting) and satellite telemetry.
6. Document important habitat for Wood Storks during the nonbreeding season.
7. Determine if the amount of foraging habitat limits species recovery. Study foraging ecology and habitat use in South Carolina.
8. Participate in and contribute to the regional Wood Stork working group.
9. Integrate management for Wood Storks into traditional waterfowl management of currently impounded wetlands by timing draw downs during key feeding periods (post fledging).
10. Provide technical guidance and assistance to owners and managers of land where storks nest, feed, and roost.

Monarch butterfly

1. Habitat restoration, maintenance, and enhancement
2. Planting of milkweed host plants and wildflower nectar sources.
3. Public education
4. Research
5. Monitoring

Septima's clubtail

1. Incentive programs to help farmers implement BMP's.
2. Improve instream habitat by decreasing sedimentation and runoff and increasing riparian forest cover.
3. Forestry operations should follow water quality BMP's.
4. Restrict/limit new home construction and commercial development to minimize impacts.
5. Continue monitoring of current populations.
6. Survey and document new populations.
7. Outreach and education.

Brook floater

1. Follow BMP's and protect riparian areas to prevent further population and habitat degradation.

2. Encourage responsible land use planning and promote good land use/stewardship planning via education and outreach.
3. Conduct surveys to determine presence and location of the brook floater species.
4. Monitor current populations.

Carolina heelsplitter

1. Protect upland and riparian buffer areas as a means of managing in stream water quality.
2. Protect critical habitat from future development and further habitat degradation by following BMP's.
3. Promote land stewardship practices within critical habitats with healthy populations and in other areas that contain available habitat for the Carolina heelsplitter.
4. Education and outreach

E.2 SPECIAL STATUS PLANTS

This section summarizes those special status plant species that are either documented to occur or have the potential to occur on CHTC. There are currently no federally listed plant species known to occur on CHTC. Following the summary presented in Table E-2, a summary by species is provided regarding management recommendations for these species, if found on CHTC.

Table E-2. Potential Special Status Plant Species for Clarks Hill Training Center.

Species	Status (S Rank)	Notes	Status on CHTC
Tall bellflower or American bellflower *Campanulastrum americanum*	SC (S1)	Occur in moist and open woods and thickets, prairies, streambanks, and habitat edges and roadsides. Usually annuals in the open and are usually biennials in the shade.	Unlikely, no suitable habitat present
Narrowleaf sedge *Carex amphibola*	SC (SNR)	Floodplain (river or stream floodplains), forests.	Unlikely, no suitable habitat present
James' Sedge *Carex jamesii*	SC (S1)	Mesic woodlands and edges of woodland paths.	Unlikely, no suitable habitat present
Whorled horse-balm *Collinsonia verticillata*	SC (S3)	Moist woods, often on slopes or terraces in cove	Unlikely, no suitable habitat present
Lowland Brittle Fern *Cystopteris protrusa*	SC (S2)	Occurs on moist deciduous woodlands, shaded riverbanks, upper slopes of ravines, and shaded areas along cliffs.	Unlikely, no suitable habitat present
Carolina larkspur *Delphinium carolinianum*	SC (S1)	Found in prairies, and rocky woods, and roadsides.	Unlikely, no suitable habitat present
Dutchman's breeches *Dicentra cucullaria*	SC (S1)	Found in deciduous woodlands.	Unlikely, no suitable habitat present

Table E-2. Potential Special Status Plant Species for Clarks Hill Training Center.			
Species	**Status (S Rank)**	**Notes**	**Status on CHTC**
Eastern leatherwood *Dirca palustris*	SC (S2)	Occurs in moist, rich mixed forests.	Unlikely, no suitable habitat present
Shooting star *Dodecatheon meadia*	SC (S1)	Found in moist or mesic prairies, openings in upland forests, bluffs along rivers, fens, and abandoned fields.	Unlikely, no suitable habitat present
False rue anemone *Enemion biternatum*	SC (S1)	Mesic woodlands and low woodlands along streams where deciduous trees are dominant.	Unlikely, no suitable habitat present
Upland swamp privet *Forestiera ligustrina*	SC (S1)	Dry woodlands.	Unlikely, no suitable habitat present
White-leaved Sunflower *Helianthus glaucophyllus*	SC (S2)	Historically in prairie habitats; now often associated with roadsides, powerline cuts, open woodlands.	Unlikely, no suitable habitat present
Shoals spider-lily *Hymenocallis coronaria*	SC (S2)	inhabits select rocky shoals in certain Piedmont rivers.	Unlikely, no suitable habitat present
Tuberous gromwell *Lithospermum tuberosum*	SC (S1)	Found in bluff and mixed deciduous forests.	Unlikely, no suitable habitat present
Nestronia or leechbush *Nestronia umbellula*	SC (S3)	Habitat varies and includes upland mixed pine and hardwood stands, pine stands, and growing with upland oaks and hickories.	Unlikely, no suitable habitat present
Adder's-tongue *Ophioglossum vulgatum*	SC??? (S2)	Shaded secondary and floodplain forests and forested bottomlands.	Unlikely, no suitable habitat present
One-flowered Broomrape *Orobanche uniflora*	SC (S2)	Found in woodlands, seeps in rocky cliffs, rocky glades, and thickets.	Unlikely, no suitable habitat present
American ginseng *Panax quinquefolius*	SC (S4)	Undisturbed woods mesic deciduous woodlands.	Unlikely, no suitable habitat present
Streambank mock-orange *Philadelphus hirsutus*	SC (S2)	Found in deciduous forests.	Unlikely, no suitable habitat present

Table E-2. Potential Special Status Plant Species for Clarks Hill Training Center.			
Species	**Status (S Rank)**	**Notes**	**Status on CHTC**
Swamp white oak *Quercus bicolor*	SC (S1)	Often found in bottomlands or riverbanks.	Unlikely, no suitable habitat present
Oglethorpe's oak *Quercus oglethorpensis*	SC (S3)	Occurs marshes and stream bottoms.	Potential – suitable habitat present
Durand's white oak *Quercus sinuata*	SC (S2)	Occurs often in river bluffs, river bottoms, and marshy areas.	Potential – suitable habitat present
Miccosukee gooseberry *Ribes echinellum*	FT ST (S1)	Mixed hardwood forests on slopes and in bottomlands.	Potential – within native range
Small skullcap (dwarf skullcap)* *Scutellaria parvula*	SC (S2S3)		Documented
Prairie rosinweed *Silphium terebinthinaceum*	SC (S1)	Occurs on prairies.	Unlikely, no suitable habitat present
Eared goldenrod or Blake eared goldenrod *Solidago auriculata*	SC (S1)	Found in hardwood forests, on steep slopes, and in ravines, often near streams.	Unlikely, no suitable habitat present
Georgia aster *Symphyotrichum georgianum*	ARS (SNR)	Open, sunny areas, including edges and openings in rocky, upland oak-hickory-pine forests, and rights-of-way. Primary limiting factor is availability of sunlight.	Potential – within native range, suitable habitat present
Virginia spiderwort *Tradescantia virginiana*	SC (S1)	Found in moist prairies, fertile woodlands, open woods, meadows, hillsides, stony bluffs, stream banks, and along roadsides	Unlikely, no suitable habitat present
Aethusa-like trepocarpus *Trepocarpus aethusae*	SC (S1)	Restricted to Savannah River drainage.	Unlikely, no suitable habitat present
Faded trilium *Trillium discolor*	SC (S4)	Occurs in cove and bluff forests and is restricted to the Savannah River drainage.	Unlikely, no suitable habitat present
Narrow-leaved Trillium *Trillium lancifolium*	SC (S1)	Found in upland hardwood forests.	Unlikely, no suitable habitat present
Sources: USFWS McCormick County list; South Carolina Department of Natural Resource (SCDNR) Rare, Threatened, and Endangered Species of South Carolina for McCormick County (2019).			

Table E-2. Potential Special Status Plant Species for Clarks Hill Training Center.			
Species	**Status (S Rank)**	**Notes**	**Status on CHTC**

FE=federally endangered, FT=federally threatened; ARS = USFWS has been petitioned to list the species and a positive 90-day finding has been issued (listing may be warranted); information provided only for conservation actions as no federal protections currently exist.

SE=state endangered, ST=state threatened,
SC = state species of special concern (S1, S2, S3 all indicate state Species of Conservation Concern)

S RANK: The priority assigned by SCDNR based upon the element's status within the state.
S1 = critically imperiled in the state because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extirpation in the state.
S2 = imperiled in state because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extirpation from the state.
S3 = rare or uncommon in state (on the order of 21 to 100 occurrences).
S4 = apparently secure in state, with many occurrences.
SNR = not ranked at state level

E.2.1 Documented Plant Species

The following are management recommendations for species confirmed as occurring on CHTC. Species descriptions and background information is maintained by SCARNG in a centralized location.

Dwarf skullcap

This plant was not previously reported from McCormick County. A large population of dwarf or small skullcap was, however, relocated. Dwarf skullcap is a rare, diminutive herb usually found on Iredell soils in wet, basic woodland glades. Until 2006, when 50 plants were found at CHTS (Gaddy, 2006), it was known in South Carolina only from Edgefield and York Counties (herbarium.biol.sc.edu). In 2016, over 300 plants occurred at the same location, East Dwarf Palmetto Glade Natural Area. This site may be one of the largest populations of the species in South Carolina.

1. Prescribed burns and/or brushing may be beneficial (dependent on local site conditions).
2. Follow BMPs, especially around streams and use care near ravines, steep slopes, cliffs, rock outcrops, etc.
3. Maintain and restore open habitat through selective clearing and brushing.
4. Avoid locating landings, staging areas, or access routes in open sandy areas dominated by native grasses.
5. Avoid known individual plant locations and conduct operations elsewhere when they are least likely to cause damage.
6. Avoid broadcast spraying of herbicides; use care with spot spraying.

E.2.2 Potential Plant Species

The following are management recommendations for species with some potential to occur on CHTC, but not yet confirmed. See Table E-2 for more information about their likelihood on CHTC. Species descriptions and background information is maintained by SCARNG in a centralized location.

Oglethorpe's oak

Durand's white oak

Miccosukee gooseberry

1. Avoid logging and changes to hydrology.
2. Monitor and control invasive species such as Chinese privet and Japanese honeysuckle.

Georgia aster

1. Use prescribed fire and/ or mowing in winter/ early spring to create or maintain sunny open areas.
2. Avoid the use of herbicides.
3. Avoid clearcutting and soil disturbance.
4. Eradicate exotic pest plant species.
5. Protect sites from conversion to pine plantations or other developments.

F. PHYSICAL OVERVIEW

The CHTC is located in the lower Piedmont physiographic region of South Carolina (see **Figure 1** in **Appendix B**). The Piedmont rises from the Fall Line, which marks the boundary with the coastal plain, to an elevation of 1,040 feet above mean sea level. Streams are generally cut deep into the surface and the topography is one of rolling hills. The potential natural vegetation is dominated by mixture of hardwood and pine forest. Loblolly pine, slash pine, white oak, red oak, gum, yellow poplar, and sycamore are principle species typically found in this region. Early successional forest on abandoned agricultural lands dominate the central piedmont (Godfrey 1997).

On a topographic map, CHTC appears as a peninsula that extends into J Strom Thurmond lake (Clarks Hill Lake) with numerous fingers extending from the central portion creating a series of recessed coves and water inlets (see **Figure 1** in **Appendix B**). Erosion has been a historic and ongoing problem in the (USACE 1995).

F.1 CLIMATE

F.1.1 Climate Summary

The climate at CHTC is classified as humid continental. The predominant climatic factors are the location in the lower latitudes and its proximity to the Appalachian Mountains to the west, which block the approach of unseasonable cold weather in the winter. These factors result in a relatively narrow annual temperature range. According to data available from the nearby USGS station near Thurmond Lake from 2005 to 2019, the mean monthly temperature for July was 82.1°F and the mean monthly temperature for January was 45.1°F (USGS 2019). The Bermuda high, a maritime tropical air mass, brings warm, moist air inland from the ocean and forms localized thunderstorms which results in high precipitation (SCDNR Climate Office 2019). Periods of maximum rainfall occur from February through March and June through August.

Table F-1. Climate Summary for Clarks Hill Training Center, SC: 1981-2010

Month	Temperature (°F) – Monthly Normal			Precipitation (Inches) - Average Monthly Normal
	Maximum	Minimum	Mean	
January	45.0	45.0	45.0	4.09
February	48.8	48.8	48.8	4.07
March	56.1	56.1	56.1	4.44
April	63.7	63.7	63.7	2.77
May	71.8	71.8	71.8	2.97
June	79.2	79.2	79.2	4.27
July	82.6	82.6	82.6	4.27
August	81.3	81.3	81.3	4.24
September	75.4	75.4	75.4	3.35
October	64.8	64.8	64.8	3.84
November	55.7	55.7	55.7	3.16
December	47.4	47.4	47.4	3.58

Source: (National Weather Service 2019)

F.1.2 Regional Projections

Climate models generally predict that across the southeast, including South Carolina, warming will continue at an accelerated rate, with the largest temperature increases occurring in the summer months. The number of very hot days > 100°F is projected to rise at a greater rate than the average temperature. Under the lower GHG emissions scenario, average temperatures are expected to rise by about 4.5°F over the next 70 years, while the higher scenario predicts the temperature to rise by about 9°F (SCDNR 2013). Summers by the 2080s are projected to be about 11°F hotter, with increased incidence of drought and more extreme precipitation events. Since the 1990s, changes in precipitation throughout the state have occurred, with increases in heavy downpours in many parts of the southeast, even though much of the region has experienced moderate to severe droughts during the same period of time (SCDNR 2013). Additionally, impacts from sea level rise are anticipated to be more intense in coastal states such as South Carolina, with impacts reaching inland via streams and lakes (SCDNR 2013).

F.1.3 DoD Climate Assessment Tool

In 2020 the DOD introduced the Army Directive 2020-08 (U.S. Army Installation Policy to Address Threats Caused by Changing Climate and Extreme Weather), requiring installations to implement the DOD Climate Assessment Tool into their INRMPS.

The DoD Climate Assessment Tool is a web-based collection of scientific climate data used to support research, analysis, and decision making regarding exposure to historical extreme weather and reasonably foreseeable climate effects. At the installation scale, the Climate Assessment Tool can be used to analyze an installation's susceptibility to climate and extreme weather events via hazard exposure assessments, inform planning and land use recommendations, and identify areas for additional climate studies. The Tool can be accessed via CAC-card at https:// dodclimate.sec.usace.army.mil/ords/f?p=118:01:::::::.

As the Tool does not provide assessments for the National Guard, only the Air Force, Army, and Navy, the closest department- level assessment we can generate is the Army. Geographically, the closest Army installation that can be used as a proxy for a Clarks Hill Training Center Hazard Assessment is Fort Gordon in Augusta, Georgia. The following documents are an Extreme Weather and Climate Change Hazard Report and Projected Installation-Specific Hazard Details for Fort Gordon, Georgia.

Extreme Weather and Climate Change Hazard Report

Fort Gordon

Background

RPSUID: 5006

Installation Name: Fort Gordon

Report Date: 15 September 2022

Data Version: 2.0

Location: Georgia

Area: 55509 acres

Department: Army

Service: Army

Component: Army Active

NCA4 Region: Southeast

Historical Extreme Weather and Climate Change Exposure

Historical Extreme Weather Event Occurrence

For historical extremes, this table shows whether the installation, or the immediately surrounding region (small watershed or county, depending on the measure) has experienced this event. of this location is classified as being in the Wildland Urban Interface as defined by the USDA.

Event Type	Has Occurred
Hurricane Frequency	X
Tornado Frequency	X
Ice Storms Occurrence	X
Hurricane Wind > 50 Knots	
Hurricane Maximum Precipitation	X
Ice Jam Occurrence	

Damaging Extreme Weather and Wildfire Events, 2000-2021

This shows the damage sustained in the county or counties (for Alaska, NOAA forecast zone) in which Fort Gordon is located. The first table shows the total damage by event type since 2000. The second table shows the largest fifteen events across all types recorded at this location since 2000. The data for these tables come from the NOAA Storm Events Database (https://www.ncdc.noaa.gov/stormevents/).

Many NWS storm event types (https://www.nws.noaa.gov/directives/sym/pd01016005curr.pdf) are broadly similar in impact, but differ along a continuum of magnitudes or geographies (marine vs. land, for instance). In order to provide a readily accessible assessment of damages by type of damage, some NWS storm event type categories are combined for presentation in the Installation Report. More information about that event types represented by the categories below, and event types that were excluded from this analysis, can be found in *Documentation of and Justification for Collapsing NOAA Storm Event Categories* located in the Manuals tab of this tool.

Damages data for ROW locations are not available at this time as the NOAA Storm Events Database does not extend to this domain. The DCAT Team is working to identify comparable data for the ROW domain.

Damages from Extreme Weather and Wildfire, 2000-2021
Administrative Unit(s): Columbia, GA; Jefferson, GA; McDuffie, GA; Richmond, GA

Type	# of Events	Property Damage Estimate	Direct Deaths
Tornadoes and Waterspouts	19	$12,177,000.00	0
Wind Damage	407	$4,174,040.00	1
Hurricanes, Typhoons and Tropical Storms	23	$2,040,000.00	0
Riverine and Lakeshore Flooding	57	$1,204,400.00	0
Hail	158	$555,440.00	0
Heavy Rain	15	$10,000.00	0
Ice Storms, Freezing Fog and Sleet	3	$10,000.00	0
Drought	28	$0.00	0
Snowstorms	2	$0.00	0
Cold Temperature Extremes	13	$0.00	0
Wildfire	2	$0.00	0
Heat and Heat Waves	9	$0.00	0

Top Property Damaging Storm Events, 2000-2021
Administrative Unit(s): Columbia, GA; Jefferson, GA; McDuffie, GA; Richmond, GA

Rank	Date	Type	Property Damage Estimate	Direct Deaths
1	04/10/2009	Tornado	$6,172,000.00	0
2	05/11/2008	Tornado	$5,000,000.00	0
3	08/21/2008	Tropical Storm	$1,890,000.00	0
4	09/07/2004	High Wind	$1,000,000.00	0
5	03/15/2008	Tornado	$640,000.00	0
6	05/11/2008	Thunderstorm Wind	$500,000.00	0
7	08/07/2012	Flash Flood	$456,000.00	0
8	05/20/2005	Thunderstorm Wind	$400,000.00	0
9	04/05/2011	Thunderstorm Wind	$371,000.00	0
10	02/22/2003	Tornado	$310,000.00	0
11	03/15/2008	Hail	$300,000.00	0
12	03/20/2001	High Wind	$200,000.00	0
13	05/23/2010	Thunderstorm Wind	$200,000.00	0
14	02/24/2012	Thunderstorm Wind	$190,000.00	0
15	09/11/2017	Tropical Storm	$150,000.00	0

Dominant Climate Change Hazards

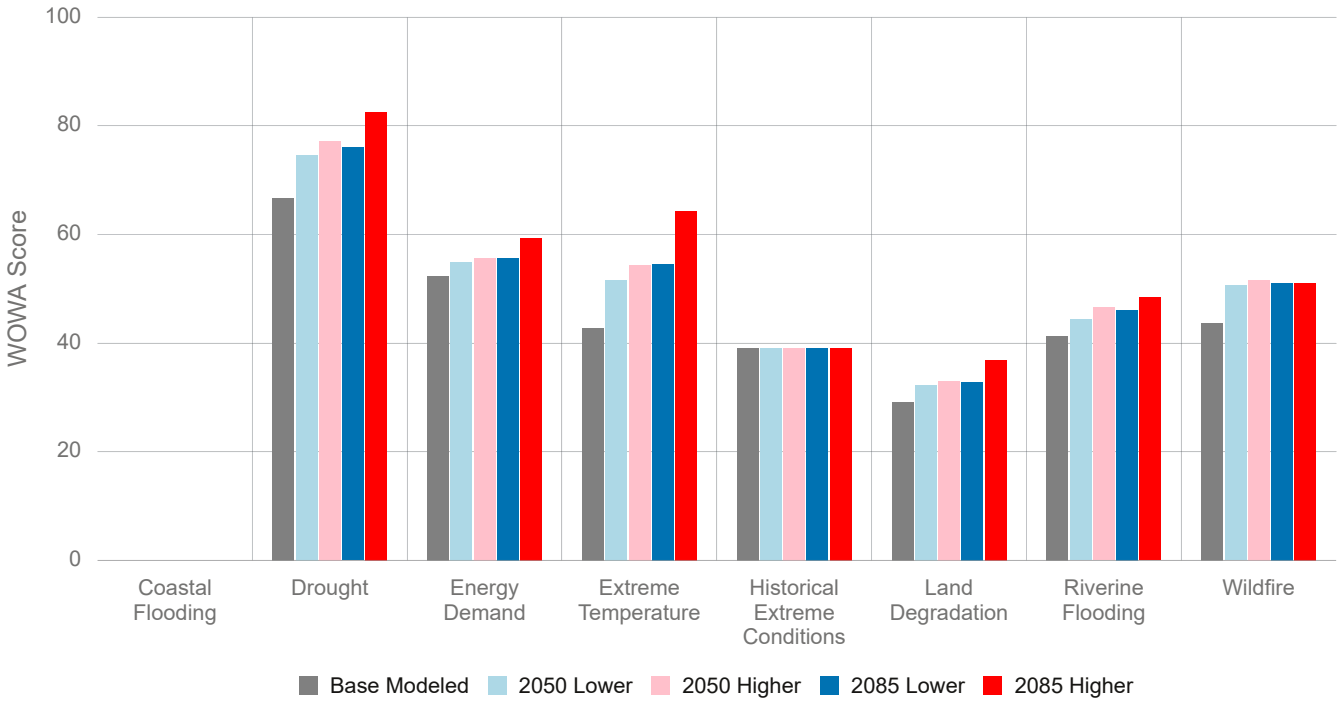
This section explores the dominant climate hazards that Fort Gordon is likely to be exposed to in the future, compared to its exposure based on the modeled historical baseline (1950-2005) data. To bracket the range of potential future conditions, the data are presented to two climate epochs (a 30-year average centered on 2050 (2035-2064) and another centered on 2085 (2070-2099). For each epoch, information for two future scenarios* is provided: a Higher emissions scenario that assumes minimal greenhouse gas mitigation and therefore higher rates of warming and a Lower emissions scenario that assumes more aggressive greenhouse gas mitigation and, therefore, lower rates of warming.

* The Higher scenario corresponds to representative concentration pathway (RCP) 8.5, the Lower to RCP 4.5 used in climate modeling studies.

Ranked Future Climate Exposure Hazards per Epoch-Emission Scenario (and the hazard's greatest contributing indicator)

Rank	2050-High	2085-High
1	Drought (Mean Annual Runoff)	Drought (Mean Annual Runoff)
2	Energy Demand (5-Day Maximum Temperature)	Extreme Temperature (5-Day Maximum Temperature)
3	Extreme Temperature (5-Day Maximum Temperature)	Energy Demand (5-Day Maximum Temperature)
4	Wildfire (Fuel Abundance)	Wildfire (Flash Drought Frequency)
5	Riverine Flooding (Extreme Precipitation Days)	Riverine Flooding (Extreme Precipitation Days)
6	Historical Extreme Conditions (Hurricane Frequency)	Historical Extreme Conditions (Hurricane Frequency)
7	Land Degradation (Aridity)	Land Degradation (Aridity)

The contribution of each hazard to overall exposure through time is also illustrated graphically, below. **Note that historical extreme conditions is a static hazard across the future.**



Heat Exposure Hazard

Changing temperatures are the driving force behind all climate change hazards, either directly through factors such as excess morbidity and mortality, or indirectly through changes to drought, wildfire, flooding, coastal inundation, and other hazards.

Indicator ID	Indicator Name	Base	2050 Lower	2050 Higher	2085 Lower	2085 Higher
402	5-Day Maximum Temperature (°F)	98	102	104	104	108
401	Days Above 95°F (days/year)	16	55	67	67	108
405	High Heat Index Days* (days/year)	78	119	128	127	156

* The Wet Bulb Globe Temperature, cannot be calculated with the data available from climate models, so the National Weather Service Heat Index is provided as an estimate of the combined effects of heat and humidity on people working and exercising outdoors.

Riverine Flood Inundation Hazard

Percent Installation Area Inundated

This table shows the percent of the installation boundary that is inundated at the current 1% annual exceedance probability (AEP) riverine flood event, and when freeboards of 2 ft and 3 ft are added to the 1% AEP flood elevation in accordance with 10 USC 2802 and UFC 3-201-01, Civil Engineering. If the values are 0, no part of the installation is subject to riverine flooding. Riverine floodplain maps are available on Defense Installations Spatial Data Infrastructure (DISDI) Portal.

Indicator ID	Indicator Name	1% AEP	1% AEP+2 Ft	1% AEP+3ft
301	Riverine Flood Extent	25%	34.8%	37.7%

Percent of Buildings Inundated Based on DISDI Data

This table shows the percent of the installation buildings likely to be inundated at the current 1% annual exceedance probability (AEP) riverine flood event, and when freeboards of 2 ft and 3 ft are added to the 1% AEP flood elevation in accordance with 10 USC 2802 and UFC 3-201-01, Civil Engineering. If the values are 0, no buildings are flooded by the event.

RPSUID	Total # of Buildings*	Base 1% AEP	1% AEP + 2Ft	1% AEP + 3Ft
5006	1651	11% (175)	17% (281)	19% (318)

* DoD Buildings from DISDI FY19 Buildings Sites Geodatabase

Coastal Flood Inundation Hazard

Percent Installation Area Inundated

This table shows the percent of the installation boundary that is inundated at the current 1% annual exceedance probability (AEP) coastal flood event, in accordance with UFC 3-201-01, Civil Engineering. Sea level elevations are based on the Defense Regional Sea Level (DRSL) Lowest and Highest sea level rise curves and a simple bathtub model of inundation. Storm surge is explicitly excluded, and would be in addition to the elevations modeled here. If the values are 0, no part of the installation is subject to coastal flooding or no data are available for the installation DRSL. Coastal inundation maps are available on Defense Installations Spatial Data Infrastructure (DISDI) Portal.

Indicator ID	Indicator Name	Base	2050 Lower	2050 Higher	2085 Lower	2085 Higher
201	Coastal Flood Extent	0%	0%	0%	0%	0%

Percent of Buildings Inundated Based on DISDI Data

This table shows the percent of the installation buildings likely to be inundated by the 1% annual exceedance probability (AEP) coastal flood event, and by this event in the future given sea level rise. Future sea levels are determined from data in the Defense Regional Sea Level (DRSL) Lowest and Highest sea level rise curves, bracketing the scenarios required by UFC 3-201-01, Civil Engineering. If the values are 0, no buildings are flooded by the event.

RPSUID	Total # of Buildings*	Base 1% AEP	2050 Low	2050 High	2085 Low	2085 High
5006	1651	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)

* DoD Buildings from DISDI FY19 Buildings Sites Geodatabase

Permafrost

Area of Installation With Permafrost Hazard Index > 0

The permafrost Hazard Index (Hjort et al. 2018) is an estimate of where permafrost co-occurs with fine, non-gravelly sediment. Permafrost thaw in these locations is likely to result in subsidence and damage to buildings and infrastructure. This indicator is the percent area of the installation where this index is greater than 0, indicating future subsidence hazard from permafrost thaw. A value of 0 indicates future thaw will not result in infrastructure damage (because the substrate, for example is gravelly) or because no permafrost is currently present (therefore there is also no hazard).

Indicator ID	Indicator Name	Base	2050 Lower	2050 Higher	2085 Lower	2085 Higher
702	Permafrost Hazard Potential	0%	0%	0%	0%	0%

Percent of Buildings With Permafrost Exposure Based on DISDI Data

The table below shows the percent of installation buildings located within areas where permafrost modeled to occur today based on USGS 50% likelihood estimate of permafrost extent (Pastick et al. 2015). If the values are 0, no buildings are anticipated to be affected by permafrost thaw. Permafrost extent maps are available on Defense Installations Spatial Data Infrastructure (DISDI) Portal.

RPSUID	Total # of Buildings*	Permafrost Likely
5006	1651	0% (0)

* DoD Buildings from DISDI FY19 Buildings Sites Geodatabase

Climate Change Exposure Overview

This section provides an overview of the key climate change concerns of the region in which Fort Gordon is located. Additional information about this region is provided in the Hazard Awareness Tab of the DCAT, and from the National Climate Assessment (https://nca2018.globalchange.gov/).

4th National Climate Assessment - Key Messages: Southeast

Southeast Key Message 1: Urban Infrastructure and Health Risks

Many southeastern cities are particularly vulnerable to climate change compared to cities in other regions, with expected impacts to infrastructure and human health. The vibrancy and viability of these metropolitan areas, including the people and critical regional resources located in them, are increasingly at risk due to heat, flooding, and vector-borne disease brought about by a changing climate. Many of these urban areas are rapidly growing and offer opportunities to adopt effective adaptation efforts to prevent future negative impacts of climate change.

Southeast Key Message 2: Increasing Flood Risks in Coastal and Low-Lying Regions

The Southeast's coastal plain and inland low-lying regions support a rapidly growing population, a tourism economy, critical industries, and important cultural resources that are highly vulnerable to climate change impacts. The combined effects of changing extreme rainfall events and sea level rise are already increasing flood frequencies, which impacts property values and infrastructure viability, particularly in coastal cities. Without significant adaptation measures, these regions are projected to experience daily high tide flooding by the end of the century.

Southeast Key Message 3: Natural Ecosystems will be Transformed

The Southeast's diverse natural systems, which provide many benefits to society, will be transformed by climate change. Changing winter temperature extremes, wildfire patterns, sea levels, hurricanes, floods, droughts, and warming ocean temperatures are expected to redistribute species and greatly modify ecosystems. As a result, the ecological resources that people depend on for livelihood, protection, and well-being are increasingly at risk, and future generations can expect to experience and interact with natural systems that are much different than those that we see today.

Southeast Key Message 4: Economic and Health Risks for Rural Communities

Rural communities are integral to the Southeast's cultural heritage and to the strong agricultural and forest products industries across the region. More frequent extreme heat episodes and changing seasonal climates are projected to increase exposure-linked health impacts and economic vulnerabilities in the agricultural, timber, and manufacturing sectors. By the end of the century, over one-half billion labor hours could be lost from extreme heat-related impacts. Such changes would negatively impact the region's labor-intensive agricultural industry and compound existing social stresses in rural areas related to limited local community capabilities and associated with rural demography, occupations, earnings, literacy, and poverty incidence. Reduction of existing stresses can increase resilience.

U.S. Caribbean Key Message 1: Freshwater

Freshwater is critical to life throughout the Caribbean. Increasing global carbon emissions are projected to reduce average rainfall in this region by the end of the century, constraining freshwater availability, while extreme rainfall events, which can increase freshwater flooding impacts, are expected to increase in intensity. Saltwater intrusion associated with sea level rise will reduce the quantity and quality of freshwater in coastal aquifers. Increasing variability in rainfall events and increasing temperatures will likely alter the distribution of ecological life zones and exacerbate existing problems in water management, planning, and infrastructure capacity.

U.S. Caribbean Key Message 2: Marine Resources

Marine ecological systems provide key ecosystem services such as commercial and recreational fisheries and coastal protection. These systems are threatened by changes in ocean surface temperature, ocean acidification, sea level rise, and changes in the frequency and intensity of storm events. Degradation of coral and other marine habitats can result in changes in the distribution of species that use these habitats and the loss of live coral cover, sponges, and other key species. These changes will likely disrupt valuable ecosystem services, producing subsequent effects on Caribbean island economies.

U.S. Caribbean Key Message 3: Coastal Systems

Coasts are a central feature of Caribbean island communities. Coastal zones dominate island economies and are home to critical infrastructure, public and private property, cultural heritage, and natural ecological systems. Sea level rise, combined with stronger wave action and higher storm surges, will worsen coastal flooding and increase coastal erosion, likely leading to diminished beach area, loss of storm surge barriers, decreased tourism, and negative effects on livelihoods and well-being. Adaptive planning and nature-based strategies, combined with active community participation and traditional knowledge, are beginning to be deployed to reduce the risks of a changing climate.

U.S. Caribbean Key Message 4: Rising Temperatures

Natural and social systems adapt to the temperatures under which they evolve and operate. Changes to average and extreme temperatures have direct and indirect effects on organisms and strong interactions with hydrological cycles, resulting in a variety of impacts. Continued increases in average temperatures will likely lead to decreases in agricultural productivity, changes in habitats and wildlife distributions, and risks to human health, especially in vulnerable populations. As maximum and minimum temperatures increase, there are likely to be fewer cool nights and more frequent hot days, which will likely affect the quality of life in the U.S. Caribbean.

U.S. Caribbean Key Message 5: Disaster Risk Response to Extreme Events

Extreme events pose significant risks to life, property, and economy in the Caribbean, and some extreme events, such as flooding and droughts, are projected to increase in frequency and intensity. Increasing hurricane intensity and associated rainfall rates will likely affect

human health and well-being, economic development, conservation, and agricultural productivity. Increased resilience will depend on collaboration and integrated planning, preparation, and responses across the region.

U.S. Caribbean Key Message 6: Increasing Adaptive Capacity through Regional Collaboration

Shared knowledge, collaborative research and monitoring, and sustainable institutional adaptive capacity can help support and speed up disaster recovery, reduce loss of life, enhance food security, and improve economic opportunity in the U.S. Caribbean. Increased regional cooperation and stronger partnerships in the Caribbean can expand the region's collective ability to achieve effective actions that build climate change resilience, reduce vulnerability to extreme events, and assist in recovery efforts.

Fort Gordon - Fort Gordon

(* = selected locations)

Hazard		Wildfire	Drought	Coastal Flooding	Riverine Flooding	Extreme Temperature	Energy Demand	Historical Extreme Conditions	Land Degradation
Modeled Historical Period (1950-2005)	315	13.9%	21.2%	0.0%	13.1%	13.6%	16.6%	12.4%	9.3%
Lower 2050	348	14.6%	21.5%	0.0%	12.8%	14.9%	15.8%	11.2%	9.3%
Lower 2085	355	14.4%	21.4%	0.0%	13.0%	15.4%	15.7%	11.0%	9.2%
Higher 2050	357	14.4%	21.6%	0.0%	13.0%	15.2%	15.6%	10.9%	9.2%
Higher 2085	382	13.4%	21.6%	0.0%	12.7%	16.9%	15.5%	10.2%	9.7%

Hazards

- Wildfire
- Drought
- Coastal Flooding
- Riverine Flooding
- Extreme Temperature
- Energy Demand
- Historical Extreme Conditions
- Land Degradation

Wildfire	Drought	Coastal Flooding	Riverine Flooding	Extreme Temperature	Energy Demand	Historical Extreme Conditions	Land Degradation
101	101	201	301	401	402	801	105
601	102	202	302C	402	501	802	202
602	105		303	403	502	803	604
604	106		304	404	503	804	701
	108C		305	405		805	702
						806	
						807	
						808	

ORness: 0.70
Using National Standard? Yes

Dataset: DoD Climate Assessment Tool 2.0
Climate Data Source: CMIP5 GCM - LOCA dataset (CONUS); BCSD dataset (AK, HI); Globus dataset (ROW)

F.2 GEOLOGY AND TOPOGRAPHY

Topography shows patterns of well-defined drainages with streams dissecting plateaus. Ridgetops tend to be fairly narrow to broad with short slopes adjacent to major streams. Streams are cut deeply into the surface and the topography is one of rolling hills. There tends to be little variation in elevation, which ranges from 317 to 432 feet. The valley floors generally are narrow and make up less than 10% of the land area in this region. There are no distinct upland or lowland formations or large valleys on CHTC.

F.3 SOILS

The predominant soil types at CHTC are sandy clays and sandy silt overlying porphyritic granite of the Georgia silt loam, Herndon silt loam, and Nason silt loam series. Soils are highly erodible and low in fertility. Heavy farming practices of the two previous centuries in this region resulted in extensive loss of topsoil. Naturally occurring fertile soils are found in the alluvial fans where tributary streams meet the main streams. A considerable amount of fertilization is required for crop production, so land is best suited for pastures or timber production.

NRCS soil mapping indicates six soil types on CHTC; all of which are slightly erodible, with generally high acidity, high clay content, and low natural fertility (NRCS 2019). Table F-2 displays soil by series with associated erosion potential. **Figure 2** in **Appendix B** depicts the soils on CHTC.

Table F-2. Erosion Potential for the Soils of Clarks Hill Training Center

Soil Series, Percent Slope	Acres	Erosion Hazard
Georgeville silt loam, 2 to 6 percent slopes	358	Slight
Georgeville silt loam, 6 to 10 percent slopes	285	Slight
Herndon silt loam, 2 to 6 percent slopes	106	Slight
Herndon silt loam, 6 to 10 percent slopes	24	Slight
Nanford silt loam, 10 to 15 percent slopes	15	Slight
Tarrus silt loam, 10 to 15 percent slopes	76	Slight

Source: (NRCS 2019)

A number of physical and chemical factors contribute to the susceptibility of a soil to damage from military training. These include texture, organic matter content, permeability, clay mineralogy, structure, and depth. There are several indices that incorporate the physical and chemical factors into

numeric scales or broad categories that are more easily related to the potential effects of tracked vehicle training: K-factor, T-factor, hydrologic soil groups, and land use capability class A listing of these indices and links to their descriptions can be found at https://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/survey/office/ssr10/tr/?cid=nrcs144p2_074835 and an overview of soils and characteristics in South Carolina can be found at https://www.nrcs.usda.gov/wps/portal/nrcs/main/sc/soils/. Interpretation of the data found in the soil survey reveals that soil erosion has the potential to be a major management concern. However, soil disturbance on CHTC is minimal due to the lack of heavy equipment maneuvers and the limited training activities outside the developed/improved area.

F.4 WATER RESOURCES

Precipitation, perennial streams, and lakes provide an abundance of water on CHTC, except during a period of significant drought. Groundwater supplies are relatively small, but wells are the principal source for domestic use outside of CHTC and provide the water supply on CHTC. CHTC is located on a peninsula associated with J. Strom Thurmond Lake/Savannah River (see **Figure 3** in **Appendix B**).

Best management practices used at CHTC to protect water resources include spill prevention, road management (i.e., ditch cleaning, water bars, culvert maintenance), and wetland protection.

F.4.1 Watersheds and Streams

Most streams in this region around CHTC are low to moderate gradient streams with mostly cobble, gravel, and sandy substrates. All the streams on CHTC drain into the dammed Savannah River and are part of the Upper Savannah Watershed (HUC#03060103). The dam created Lake Strom Thurmond, which forms the southwestern boundary of the installation. CHTC lies entirely within Lower Thurmond Lake (HUC#030601030713) (USEPA 2019).

In 2012, a survey of water resources on CHTC documented 13,503 feet of streams that are considered jurisdictional waters of the US (SCARNG 2012). These streams are largely unnamed drainages (see **Figure 3** in **Appendix B**). Major waterways near CHTC include Dordon Creek to the northwest and Camp Creek to the north (USEPA 2019).

There are three sites within this HUC unit that are on the South Carolina 303(d) list, although only one is in or near CHTC. The Clarks Hill Reservoir site in the forebay near the reservoir dam has a fish consumption advisory[1] (SCDHEC 2018).

F.4.2 Wetlands

Wetlands are important because they store water and minimize flooding. They act as a natural purifier and filter excess nutrients and sediment. Micro- and macro invertebrates that occur in wetlands habitat use or break down contaminants. Wetland aquatic vegetation protects shorelines from erosion and provides food and cover for wildlife. Wetlands usually occur in conjunction with the hydric soils along the surface drainage systems in the region around CHTC.

A "jurisdictional wetland," as defined by Section 404 of the Clean Water Act, is an area that displays three characteristics: (1) hydrophytic vegetation, (2) hydric soil, and (3) wetland hydrology and meets

[1] The other two sites are northwest of CHTC and are Hawe Creek at Secondary Road 44 (aquatic life uses, copper, and zinc), and Unnamed Tributary to Hawe Creek at Stream Mouth (aquatic life uses and pH).

other criteria related to its relationship to other waters of the US. Areas that are periodically wet but do not meet all three criteria are not wetlands with respect to USACE permitting. Wetlands were surveyed in 2012 and re-evaluated in 2016 (SCARNG 2012, 2016b). There are a total of 2.53 acres of wetland delineated at CHTC, across three wetlands (SCARNG 2012).

The first wetland is called Luther Point Road Wetland. It is located off Luther Point Road and is comprised of two connecting depressions and an old growth forest stand that is 0.91 acres (SCARNG 2016b). Vegetation in this wetland includes one dominant tree (a willow oak (*Quercus phellos*) that was almost 4.5 feet DBH in 2016), large (up to 30 inches DBH in 2016) overcup oaks (*Quercus lyrata*), American elm (*Ulmus americana*), sweet gum (*Liquidambar styraciflua*), red maple (*Acer rubrum*), and green ash (*Fraxinus pennsylvanica*) (SCARNG 2016b).

The second wetland on CHTC is the southmost wetland called the Convoy Trail Wetland, located west of the Convoy Trail, and is 0.43 acres (SCARNG 2016b). This wetland is deeper, with standing water most of the year. Red maple, willow oak, green ash, and buttonbush (*Cephalanthus occidentalis*) are the most common woody plant species present in this wetland (SCARNG 2016b).

The third wetland found on CHTC occurs as part of a braided stream between the two previous wetlands and is 1.19 acres in size (SCARNG 2012). Dominant plants include willow oak, green ash, sweet gum, and hackberry (*Celtis laevigata*), and winged elm (*Ulmus alata*) (SCARNG 2012).

G. BIOLOGICAL OVERVIEW

G.1 ECOREGION

Following the USEPA ecoregion hierarchy, Clarks Hill Training Center is located in the Piedmont Ecological Region (Level III), which occupies the northwestern portion of the state of South Carolina (Griffin et al. 2002). The Piedmont region occupies the area between the Southern Blue Ridge Escarpment and the Sandhills Ecoregion. CHTC is in the Southern Outer Piedmont (Level IV), which has lower elevations, less relief, and less precipitation than the areas to the north (Griffith et al. 2002). Loblolly and shortleaf pine is the dominant vegetation type on old field sites and pine plantations. In less altered areas, mixed oak forest can be found. Fire suppression, logging and land use change have altered the ecosystem significantly since the area was heavily settled.

G.2 VEGETATIVE COMMUNITIES

The potential natural vegetation is dominated by mixture of hardwood (deciduous) and pine forest, and about 75% of CHTS is dominated by pine. Of 871 acres, 831 acres of CHTC are forested (SCARNG 2016a). Wetland and other wet areas support mixed hardwood or hardwood-pine sites. Because the majority of the CHTC is a peninsula, there is a substantial amount of shoreline. Historically, the Piedmont was widely farmed in cotton plantations, but many lands in the region have been allowed to revert to second growth pine with a mixture of regional hardwoods.

Forests around CHTC are made up of loblolly pine (*Pinus taeda*), shortleaf pine (*P. echinata*), and scattered small stands of longleaf pine (*P. palustris*) (USACE 1995). The five basic vegetation communities on CHTC consist of (SCARNG 2002):

1. Loblolly pine
2. Loblolly pine –hardwood
3. Shortleaf pine
4. Shortleaf pine- hardwood
5. Loblolly pine-shortleaf pine

Hardwood species associated with the pine forests include sweetgum (*Liquidambar styraciflua*), yellow-poplar (*Liriodendron nrlipifera*), white oak (*Quercus alba*), post oak (*Q. stellata*), southern red oak (*Q. falcata*), other red oaks, white ash (*Fraxinus americana*), winged elm (*Ulmus alata*), and other regional hardwoods (USACE 1995). Minor constituents of this type include sourwood (*Oxydendron arboreum*), American holly (*Ilex opaca*), sycamore (*Platanus occidentalis*), and red maple (*Acer rubrum*) (USACE 1995). Other hardwood midstory and ground vegetation associations include black oak (*Quercus velutina*), turkey oak (*Quercus laevis*), red maple (*Acer rubrum*), white oak (*Quercus alba*), blackgum (*Nyssa sylvatica*), poison ivy (*Rhus radicans*), ferns (*Polystichum* sp.), and woodgrass (*Uniola sessiliflora*) (SCARNG 2002).

Three important natural areas are associated with drainages and wet areas on CHTC. These include the West Dwarf Palmetto Glade, the East Dwarf Palmetto Glade, and Chalk Maple Ravine. The West Dwarf Palmetto Glade is roughly 2 acres in size and is a bridged wetland/creek drainage bottom in the Cantonment Area with dominant vegetation made up of willow oak, sweet gum, and mixed hardwoods

in with an open understory of dwarf palmetto (*Sabal minor*) (SCARNG 2016b). The East Dwarf Palmetto Glade is located east of the main entrance road to the Cantonment and is a dwarf palmetto-willow oak wetland similar to the west location. This site is special because of the presence of over 300 individuals of the rare plant, dwarf skullcap (*Scutellaria parvula*), and it has a high diversity of species (SCARNG 2016b). Mature willow oak dominates the canopy with scattered clumps of dwarf palmetto interspersed with sedges in the understory. Finally, Chalk Maple Ravine is a northwest facing ravine in the northern portion of CHTC made up of a second-growth mixed hardwood ravine dominated by white oak (*Quercus alba*) and other mixed hardwood trees with an understory dominated by chalk maple (*Acer leucoderme*) trees (SCARNG 2016b).

Wet depressions within CHTC are dominated by willow oak and overcup oak (Q*uercus lyrata*), sweet gum, American elm (*Ulmus americana*), and green ash (*Fraxinus pennsylvanica*) (SCARNG 2016b). Several small non-forested littoral marsh areas are found along the margins of Lake Thurmond where shorelines periodically fluctuate (SCARNG 2016b).

The few open areas are maintained in open condition for operational use but most areas are included within the wildlife management program (see **Section G.4.2**).

G.3 FLORA

There are at least 260 species of plants present on CHTC (see Table D-1), with only a few rare plants (see Table E-2).

G.3.1 Invasive Plants

Invasive plant species were surveyed for in 2018 with the two most common invasive species on CHTC being lespedeza (*Lespedeza cuneata*) and Johnson grass (*Sorghum halepense*) (SUMMIT 2018). Other invasive plant species documented during this survey included shrub lespedeza (*Lespedeza bicolor*), sacred bamboo (*Nandina domestica*), and Japanese climbing fern (*Lygodium japonicum*) (SUMMIT 2018). Other non-native plant species documented at CHTC include the slash pine (*Pinus elliottii*), Japanese honeysuckle (*Lonicera japonica*), and kudzu (*Pueraria spp*.) (SCARNG 2002). It is also possible that the chinaberry (*Melia azedarach*), princess tree (*Paulownia tomentosa*), mimosa (*Albizia julibrissin*) and *Catalpa* spp. are found at CHTC, with sources from nearby residences (SCARNG 2002). Japanese honeysuckle is abundant throughout the area and will overgrow small openings, as will kudzu.

G.4 FAUNA

The fauna found on CHTC is typical of the Piedmont region of South Carolina. Typical upland species include white-tailed deer (*Odocoileus virginianus*), doves (*Columbidae* spp.), and rabbits (*Oryctolagus cuniculus*). Typical aquatic species include beavers (*Castor canadensis*), muskrats (*Ondatra zibethicus*), and otters (*Lontra canadensis*) (USACE 1998). Incidental observations have documented whitetail deer, eastern wild turkey (*Meleagris gallopavo*), eastern cottontail rabbit, grey squirrel, fox squirrel, and bob-white quail (SCARNG 2016a).

G.4.1 Neotropical Migratory Birds

CHTC has not completed any bird surveys, but information from nearby Strom Thurmond Lake indicates that migratory waterfowl use the area. Species such as loons, coots, wood ducks,, mallards, and Canada geese are fairly common, along with shorebirds such as herons, seagulls, and terns (USACE 1998).

G.4.2 Bat Species

A bat survey was completed on CHTC in 2017; however, it was not completed during the optimal time period and a survey should be repeated soon during the summer months (SCARNG 2017). Bat species documented during mist netting included the eastern red bat (*Lasiurus borealis*), Seminole bat (*Lasiurus seminolus*), and evening bat (*Nycticeius humeralis*). Bat species documented during acoustic surveys included the northern yellow bat (*Lasiurus intermedius*), hoary bat (*Lasiurus cinereus*), tricolored bat (*Perimyotis subflavus*), little brown bat (*Myotis lucifugus*), silver bat (*Lasionycteris noctivagans*), big brown bat (*Eptesicus fuscus*), and the Brazilian free tailed bat (*Tadarida brasiliensis*). A previous bat survey in 2000 also identified eastern pipistrelle (*Pipistrellus subflavus*) on CHTC.

G.4.3 Wildlife Game Species

All fishing and game management is handled by the SCDNR on CHTC. Season dates and harvest quotas those set each year by the State of South Carolina for McCormick County, which falls into the Game Zone 2 Wildlife Management Area (SCDNR 2019). No commercial trapping is allowed on CHTC.

G.4.4 Fish Species

While there have been no surveys for fish species specific to CHTC, USACE has some information related to J. Strom Thurmond Lake (USACE 1998). Fish supported by the lake include those typical of most large southeastern reservoirs. Common sport fish species include largemouth bass (*Micropterus salmoides*), bream (*Abramis brama*), crappie (*Pomoxis* spp.), catfish (*Siluformes* spp.), striped bass (*Morone saxatilis*), and hybrid bass (*Morone chrysops* x *Morone saxatilis*). Common forage fish species include blueback herring (see **Appendix E**), gizzard shad (*Dorosoma cepedianum*), and threadfin shad (*Dorosoma petenense*).

H. Summary of Supporting Reports, Documents, and Datasets

H.1 Clarks Hill Training Center Reports

Gaddy, L. L. 2006. **Endangered Species, Natural Areas, and Plant Cover of Clarks Hill Training Site, McCormick County, South Carolina**. Report to the South Carolina National Guard, Columbia, SC. 17 p.

Gaddy, L. L. 2012. **Wetlands of the Clarks Hill Training Site, McCormick County, South Carolina.** South Carolina National Guard. Conservation Office. Columbia, SC. 12 p. and Appendices.

Endangered Species, Natural Areas, and Plant Cover of Clarks Hill Training Center, McCormick County, SC- Terra Inc ognita (2006)

Small Mammal Survey at Clarks Hill Training Site- SC Department of Natural Resources (2000)

Ill Neo-
tropical Migratory Bird Survey of Leesburg and Clarks Hill Training Sites – South Carolina Dept. of Natural Resource s (2000)

Ill Threatened & Endangered Species of the Upper Savannah River Basin – US Army Corps of Engineers (2008)

Ill Vegetation and Herptofauna Survey of the SCARNG Training Site at Clarks Hill- Clemson University

H.2 Other Relevant SCARNG Documents

H.3 Other Supporting References

Godfrey, M.A. 1997. Field Guide to the Piedmont: The Natural Habitats of America's Most Lived-in Region, From New York City to Montgomery, Alabama. The University of North Carolina Press, Chapel Hill, NC.

Griffin, G., Omernick, J.M., Comstock, J., Glover, J., and Shelburne, V. 2002. Ecoregions of South Carolina. Corvallis, OR. Available from ftp://newftp.epa.gov/EPADataCommons/ORD/Ecoregions/sc/sc_eco.pdf.

Griffith, G.E., Omernick, J.M., and Comstock, J. 2002. Ecoregions of South Carolina. Corvallis, OR.

National Weather Service. 2019. Monthly Climate Normals for Clarks Hill, SC from 1981-2010. Available from https://w2.weather.gov/climate/xmacis.php?wfo=cae [accessed 11 March 2019].

NRCS. 2019. Web Soil Survey for Clarks Hill Training Center. Available from https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx [accessed 11 March 2019].

SCARNG. 2002. Integrated Natural Resources Management Plan (2002-2006) for Clarks Hill Training Center. McCormick County, SC.

SCARNG. 2012. Wetlands of the Clarks Hill Training Site. McCormick County, SC.

SCARNG. 2016a. Forest Stewardship Management Plan for Clarks Hill Training Site. McCormick County, SC.

SCARNG. 2016b. An Inventory of the Natural/Noteworthy Areas and Rare, Threatened, and Endangered Plant Species of the Clarks Hill Training Site. McCormick County, SC.

SCARNG. 2017. Northern Long-Eared Bat Survey for Clarks Hill Training Site. McCormick County, SC.

SCARNG. 2018. Invasive Plants Survey for Clarks Hill Training Center. Plum Branch, McCormick County, SC.

SCDHEC. 2018. South Carolina 303(d) List of Impaired Waters & TMDL (Limits on Contaminants) | SCDHEC. Available from https://scdhec.gov/south-carolina-303d-list-impaired-waters-tmdl-limits-contaminants#1 [accessed 15 March 2019].

SCDNR. 2013. Climate Change Impacts to Natural Resources in South Carolina. Available from http://www.dnr.sc.gov/pubs/CCINatResReport.pdf [accessed 11 March 2019].

SCDNR. 2019. Wildlife Management Area Game Zone 2. *In* South Carolina Department of Natural Resources. Available from http://www.dnr.sc.gov/hunting/zones/zone2.html [accessed 15 March 2019].

SCDNR Climate Office. 2019. South Carolina Climate. Available from http://www.dnr.sc.gov/climate/sco/ClimateData/cli_sc_climate.php [accessed 10 March 2019].

USACE. 1995. J. Strom Thurmond Lake Master Plan. Available from https://www.sas.usace.army.mil/Portals/61/docs/lakes/thurmond/J_Strom_Thurmond_Lake_1995_Master_Plan_red.pdf?ver=2019-01-18-151944-607.

USACE. 1998. Aquatic Plant Management Plan.

USEPA. 2019. WATERS GeoViewer. Available from https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=ada349b90c26496ea52aab66a092593b [accessed 15 March 2019].

USGS. 2019. USGS 02193900: Surface Water Monthly Statistics for Thurmond Lake near Plum Branch, SC. Available from https://waterdata.usgs.gov/nwis/monthly?referred_module=sw&site_no=02193900&por_02193900_126772=2225340,00021,126772,2005-03,2018-06&format=html_table&date_format=YYYY-MM-DD&rdb_compression=file&submitted_form=parameter_selection_l [accessed 10 March 2019].

I. REVIEW AND COORDINATION

Document 1. REC and Check

Document 2. NGB INRMP Comments

Document 3. JAG INRMP Correspondence and Concurrence

Document 4. G3 INRMP Correspondence and Concurrence

Document 5. State Safety Office INRMP Correspondence and Concurrence

Document 6. CFMO INRMP Correspondence and Concurrence

Document 7. Environmental Compliance INRMP Correspondence and Concurrence

Document 8. USACE INRMP Correspondence and Concurrence

Document 9. USFWS INRMP Correspondence and Concurrence

Document 10. SCDNR INRMP Correspondence and Concurrence

Comment #	II RMP Section					Comments	Reviewed
	Chapter	Section	Page	Paragrap	Line		
1	GENERAL					I strongly recommend SCARNG establish BMPs or SOPs for Clarks Hill that describes what practices can be done to minimize or avoid impacts on migratory birds and herpetofauna. Such practices or procedures could be as follows: - To the greatest extent possible, conduct land disturbing activities/prescribed fire/pesticide applications/mowing ... outside of the migratory bird nesting season, or later in the nesting season (after 1 July) to allow for fledging of the first nests. - Ensure new powerlines use avian safe designs. Retrofit powerlines that have frequent electrocutions. Consider burying powerlines that bird collisions frequently occur. - Put designs on windows where bird collisions occur or may occur based on windows and landscaping. Avoid landscaping that will attract birds near windows. - Establish a feral cat control and removal program. - Establish a routine to ensure migratory birds do not nest on equipment or structures that will be needed during the breeding season. Ensure nests are removed before they have eggs or chicks. Have procedures available on how to address migratory bird nests with eggs or chicks when a purposeful take is necessary. - Establish buffers around water bodies for herps. Avoid mowing such areas - Set mower heights higher during periods when herps are active. Avoid mowing during times of day they are most active in your area. - Establish corridors for movements of herps. - Do not introduce fish into herp breeding ponds. - Reduce lighting at night to minimize attraction to lights by migrating birds. - Check structures for bats and birds before razing them. Establish procedures on how to deal	Rubinoff
2	3	3.1	13			I recommend adding language as to responsibilities for migratory bird conservation and management per EO 13186 and associated MOU between DoD and USFWS. You should also address the DoD/MBTA rule (50 CFR 21) - military Services are authorized to take MBs during military readiness activities (MRAs). I also recommend reviewing the 18 Aug 17 DASA-ESOH memo on Guidance for Addressing Migratory Bird Management in Integrated Natural Resources Management Plans.	Rubinoff
3	3	3.5	21			Address efforts to comply with EO 11990 - Protection of Wetlands. Include wetlands that may not be considered waters of the US. EO 11990 Section 1(a) states: "Each agency shall provide leadership and shall take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities..." The EO does not distinguish between jurisdictional and non-jurisdictional waters on federal	Rubinoff
4	3	3.10	27		4-5	Have you surveyed for eagle night roosts on Clarks Hill?	Rubinoff
5	Appendix E		E-1			Table E-1. Add little brown bat. Section G.4.2 states it was recorded during acoustic surveys. It's undergoing a 12-month status review.	Rubinoff
6	Appendix E		E-2			Monarch butterfly is now a Candidate species	Rubinoff
7	Appendix E		E-4			American Wood Stork. Based on Table E-1 there is no suitable habitat for the stork. Are management recommendations necessary? If yes, should Table E-1 be changed to marginal suitable habitat"?	Rubinoff
8	Appendix E		E-4			Brook Floater. Same comment as stork.	Rubinoff
9	Appendix E		E-5			Carolina heelsplitter. Same comment as stork.	Rubinoff
10	Appendix G	G.4.2	G-3			The tri-colored bat was previously known as Eastern pipistrelle. Same species, but in new Genus.	Rubinoff
	Overall					Update dates throughout, begins in 2021	
	Signature Page					SC TAG is required to sign	
	Signature Page					Add Signature Line for NGB: Anthony Hammett Colonel, U.S. Army Chief, G9 Army National Guard	
	Signature Page					Suggest giving each Agency it's own signature page, makes it easier for routing	
	Executive Summary					2nd paragraph: Add that a Review for Operation and Effect was also completed in 2019	
	Executive Summary					Delete "the Department of Defense (DoD) and Army National Guard Policy" and replace with "The Sikes Act"-- ARNG INRMPS use to be required by Policy, the Sikes Act has been modified since then to include ARNG	
		1.4.1	4		6	Review for operation and Effect was in 2011? Previous chapters state 2013	
		3.13				Climate Change. SC is required to use the new Army climate change tool, it may or may not work at this time, so may need to be incorporated in a future INRMP update: https://corpsmapr.usace.army.mil/cm_apex/f?p=115.	
	Appendix C					A number of Cultural resources projects listed here. Recommend deleting.	
	Appendix C					I think the Project List in Appendix C is a print out from your database, but consider including STEP Project Numbers where appropriate. All STEP projects (for natural), must be in your INRMP, so having them aligned helps with easy approval	

Comment #	Chapter	Section	Page	Paragrap	Line	Comments	Reviewed
	Appendix C					Table of Projects. This table would be udpated annually, it's current format works for me, but be sure it's one you can update easily to show new projects, what was funded, what wasn't funded, etc	
	Appendices:					Consider adding an Appendix titled "Annual Updates" where you can keep a running list, or whatever, of what needs to be changed every year, what has changed, what projects were accomplished this year, what wasn't funded, etc.	

From: Hall, C Bryan <HallCB@tag.scmd.state.sc.us>
Sent: Tuesday, June 28, 2022 7:56 AM
To: Hanks, Dwight M Jr LTC USARMY NG SCARNG (USA) <dwight.m.hanks.mil@army.mil>; Bulwinkle, Marion A. <Marion.A.Bulwinkle3.mil@mail.mil>; Bird, Jon L. <BirdJL@tag.scmd.state.sc.us>; Gibson, Alex A MAJ USARMY NG SCARNG (US) <alex.a.gibson.mil@mail.mil>; Addis, Terry L. <Terry.L.Addis.mil@mail.mil>; Messer, Benson G (MAJ) <Benson.G.Messer.mil@mail.mil>
Cc: Stone, Christopher <StoneC@tag.scmd.state.sc.us>; Hicks, Robert M CIV NG SCARNG (USA) <robert.m.hicks.civ@mail.mil>; Boazman, Rebecca <BoazmanR@tag.scmd.state.sc.us>
Subject: [Non-DoD Source] INRMP Concurrence

Good morning,

I am Bryan Hall, the Conserva on Manager for the SC Army Na onal Guard. I need your assistance reviewing the required update to the SC Army Na onal Guard Integrated Natural resources Managment Plan (INRMP) for McCrady and Clarkshill. I have a ached the draft documents along with a concurrence/ review errata sheet. If you could please use the errata sheet for your reviews, comments and/ or concurrence it will help us address your comments.

A few things to note prior to beginning your review, This is an update of an exis ng plan. We are required to review and update our plan every 5 years. Opera onally there are no substan ve changes. Only updates to project list and revisons from our previous Review for Opera on and Effect (ROE).

Please send your reviews to Ms Rebbeca Bozeman at BoazmanR@tag.scmd.state.sc.us. If you have any ques on and or concerns please email me or call me at (803) 299-2349. I would ask that you please complete your reviews by COB Aug 1st. If you need addi onal me for your review please let us know so that we can plan accordingly.

Thank you for your assistance, and please let me know if you have any ques ons.

Bryan Hall
Conserva on Manager
SCARNG
(803) 299-2349
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hallcb@tag.scmd.state.sc.us

From: Wright, Kelvin D MAJ USARMY NG SCARNG (USA) <kelvin.d.wright2.mil@army.mil>
Sent: Tuesday, June 28, 2022 3:19 PM
To: Gibson, Alex A MAJ USARMY NG SCARNG (USA) <alex.a.gibson.mil@army.mil>
Cc: Hall, C Bryan <HallCB@tag.scmd.state.sc.us>; Stone, Christopher <StoneC@tag.scmd.state.sc.us>; Barton, Christopher E CIV NG SCANG (USA) <christopher.e.barton.civ@army.mil>
Subject: RE: INRMP Concurrence

MAJ Gibson,

I have no legal objec ons or concerns related to the Resource Management Plans for McCrady and Clarks Hill for the Environmental Management Division.

v/r

Wright

From: Gibson, Alex A MAJ USARMY NG SCARNG (USA) <alex.a.gibson.mil@army.mil>
Sent: Tuesday, June 28, 2022 9:04 AM
To: Wright, Kelvin D MAJ USARMY NG SCARNG (USA) <kelvin.d.wright2.mil@army.mil>
Cc: Bryan Hall <hallcb@tag.scmd.state.sc.us>; Christopher Stone <stonec@tag.scmd.state.sc.us>
Subject: Fw: INRMP Concurrence

Good Morning MAJ Wright,

Please review the a ached Resource Management Plans for McCrady and Clarks Hill for the Environmental Management Division for any legal ma ers that may come at us. An item that you find can be stated within the Review and Concern spreadsheets and returned to Mr. Hall and Mr. Stone for edi ng.

Thank you for your commitment and assistance.

MAJ Alex A. Gibson
Environmental Program Manager
FMO/ENV
SCARNG, MSC

INRMP Concurrence

Hall, C Bryan <HallCB@tag.scmd.state.sc.us>

Tue 6/28/2022 7:56 AM

To: LTC Dwight M. (Marty) Hanks <dwight.m.hanks.mil@army.mil>;Bulwinkle, Marion A. <Marion.A.Bulwinkle3.mil@mail.mil>;Bird, Jon L. <BirdJL@tag.scmd.state.sc.us>;Gibson, Alex A MAJ USARMY NG SCARNG (US) <alex.a.gibson.mil@mail.mil>;Addis, Terry L. <Terry.L.Addis.mil@mail.mil>;Messer, Benson G (MAJ) <Benson.G.Messer.mil@mail.mil>

Cc: Stone, Christopher <StoneC@tag.scmd.state.sc.us>;Hicks, Robert M CIV NG SCARNG (USA) <robert.m.hicks.civ@mail.mil>;Boazman, Rebecca <BoazmanR@tag.scmd.state.sc.us>

4 attachments (8 MB)

CHT INRMP review and Concurrence Errata Sheet.xlsx; MTC INRMP review and Concurrence Errata Sheet.xlsx; INRMP McCrady full final 2020.pdf; INRMP Clarks Hill_full Final.pdf;

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Conserva on Manager
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Reviewing Office	Document Title	Version
Bulwinkle	Final Draft INRMP Clarkshill	Jun-22

Concurrence	*Select One*	
Concur	x	*(Concurred with the current draft of the document)*
Concurred with Comments		*(Concurrence with the documents after the edits below are incorporated)*
Non-Concur		*(Non-concur with the document. If you have significant issues with the document please contact us so that we may work to resolve those issues)*

Comment #	*The comment refers to the following location in the*						Comment	Reviewer	Office of Reviewer	Action Taken to Address the Comment
	Chapter	Section	Page	Paragraph	Line	Sentence				

From: Hall, C Bryan <HallCB@tag.scmd.state.sc.us>
Sent: Tuesday, June 28, 2022 7:56 AM
To: Hanks, Dwight M Jr LTC USARMY NG SCARNG (USA) <dwight.m.hanks.mil@army.mil>; Bulwinkle, Marion A. <Marion.A.Bulwinkle3.mil@mail.mil>; Bird, Jon L. <BirdJL@tag.scmd.state.sc.us>; Gibson, Alex A MAJ USARMY NG SCARNG (US) <alex.a.gibson.mil@mail.mil>; Addis, Terry L. <Terry.L.Addis.mil@mail.mil>; Messer, Benson G (MAJ) <Benson.G.Messer.mil@mail.mil>
Cc: Stone, Christopher <StoneC@tag.scmd.state.sc.us>; Hicks, Robert M CIV NG SCARNG (USA) <robert.m.hicks.civ@mail.mil>; Boazman, Rebecca <BoazmanR@tag.scmd.state.sc.us>
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Bryan Hall
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Clarks Hill and McCrady INRMP Review
Addis, Terry L SSG USARMY NG SCARNG (USA) <terry.l.addis.mil@army.mil>
Thu 7/7/2022 10:08 AM
To:

- Boazman, Rebecca <BoazmanR@tag.scmd.state.sc.us>

Cc:

- Mcelveen, John W COL USARMY NG SCARNG (USA) <john.w.mcelveen.mil@army.mil>

Ms. Bozeman,
I have reviewed both documents and concur with their contents. No sugges ons or correc ons are necessary from the State Safety Office.

Terry Addis
SSG, SCARNG
State Safety Office/ Motorcycle Safety
Office-(803)299-6641
Cell-864-364-2199

Office Email: ng.sc.scarng.list.ngscarng-safety-office@army.mil

“Safety is not expensive, it is priceless."

"To work safely simply requires a conscious decision to protect yourself by employing sound safety strategies."

INRMP Concurrence

Hall, C Bryan <HallCB@tag.scmd.state.sc.us>

Tue 6/28/2022 7:56 AM

To: LTC Dwight M. (Marty) Hanks <dwight.m.hanks.mil@army.mil>;Bulwinkle, Marion A. <Marion.A.Bulwinkle3.mil@mail.mil>;Bird, Jon L. <BirdJL@tag.scmd.state.sc.us>;Gibson, Alex A MAJ USARMY NG SCARNG (US) <alex.a.gibson.mil@mail.mil>;Addis, Terry L. <Terry.L.Addis.mil@mail.mil>;Messer, Benson G (MAJ) <Benson.G.Messer.mil@mail.mil>

Cc: Stone, Christopher <StoneC@tag.scmd.state.sc.us>;Hicks, Robert M CIV NG SCARNG (USA) <robert.m.hicks.civ@mail.mil>;Boazman, Rebecca <BoazmanR@tag.scmd.state.sc.us>

4 attachments (8 MB)

CHT INRMP review and Concurrence Errata Sheet.xlsx; MTC INRMP review and Concurrence Errata Sheet.xlsx; INRMP McCrady full final 2020.pdf; INRMP Clarks Hill_full Final.pdf;

Good morning,

I am Bryan Hall, the Conserva on Manager for the SC Army Na onal Guard. I need your assistance reviewing the required update to the SC Army Na onal Guard Integrated Natural resources Managment Plan (INRMP) for McCrady and Clarkshill. I have a ached the dra. documents along with a concurrence/ review errata sheet. If you could please use the errata sheet for your reviews, comments and/ or concurrence it will help us address your comments.

A few things to note prior to beginning your review, This is an update of an exis ng plan. We are required to review and update our plan every 5 years. Opera onally there are no substan ve changes. Only updates to project list and revisons from our previous Review for Opera on and Effect (ROE).

Please send your reviews to Ms Rebbeca Bozeman at BoazmanR@tag.scmd.state.sc.us. If you have any ques on and or concerns please email me or call me at (803) 299-2349. I would ask that you please complete your reviews by COB Aug 1st. If you need addi onal me for your review please let us know so that we can plan accordingly.

Thank you for your assistance, and please let me know if you have any ques ons.

Bryan Hall
Conserva on Manager
SCARNG
(803) 299-2349
(803) 479-7778
hallcb@tag.scmd.state.sc.us

Reviewing Office	Document Title	Version
	Final Draft INRMP Clarkshill	Jun-22

Concurrence	Select One	
Concur		*(Concurred with the current draft of the document)*
Concurred with Comments	X	*(Concurrence with the documents after the edits below are incorporated)*
Non-Concur		*(Non-concur with the document. If you have significant issues with the document please contact us so that we may work to resolve those issues)*

Comment #	The comment refers to the following location in the document:						Comment	Reviewer	Office of Reviewer	Action Taken to Address the Comment
	Chapter	Section	Page	Paragraph	Line	Sentence				
1	CFMO Signature Page						LTC Dwight M. Hanks is the CFMO; not COL Andrew Batten	Mark Hicks	CFMO	Concurred with suggestion with correction made.
2	1	1.3.1	2	1	20	1	Recommend sentence is rewritten. "The Adjutant General is responsible for the establishment of facilities engineering and environmental services for the state and its supported installations, including implementation and enforcement of this INRMP."	Mark Hicks	CFMO	Concurred with suggestion with correction made.
3	1	1.3.1	2	4	33	1	Recommend sentence is rewritten. "The Construction & Facilities Management Office is responsible for the management and maintenance of all real property assets at CHTC"	Mark Hicks	CFMO	Concurred with suggestion with correction made.

INRMP Concurrence

Hall, C Bryan <HallCB@tag.scmd.state.sc.us>

Tue 6/28/2022 7:56 AM

To: LTC Dwight M. (Marty) Hanks <dwight.m.hanks.mil@army.mil>;Bulwinkle, Marion A. <Marion.A.Bulwinkle3.mil@mail.mil>;Bird, Jon L. <BirdJL@tag.scmd.state.sc.us>;Gibson, Alex A MAJ USARMY NG SCARNG (US) <alex.a.gibson.mil@mail.mil>;Addis, Terry L. <Terry.L.Addis.mil@mail.mil>;Messer, Benson G (MAJ) <Benson.G.Messer.mil@mail.mil>

Cc: Stone, Christopher <StoneC@tag.scmd.state.sc.us>;Hicks, Robert M CIV NG SCARNG (USA) <robert.m.hicks.civ@mail.mil>;Boazman, Rebecca <BoazmanR@tag.scmd.state.sc.us>

4 attachments (8 MB)

CHT INRMP review and Concurrence Errata Sheet.xlsx; MTC INRMP review and Concurrence Errata Sheet.xlsx; INRMP McCrady full final 2020.pdf; INRMP Clarks Hill_full Final.pdf;

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Thank you for your assistance, and please let me know if you have any ques ons.

Bryan Hall
Conserva on Manager
SCARNG
(803) 299-2349
(803) 479-7778
hallcb@tag.scmd.state.sc.us

INRMP Clarks Hill

Bird, Jon L. <BirdJL@tag.scmd.state.sc.us>

Fri 7/29/2022 11:16 AM

To: Boazman, Rebecca <BoazmanR@tag.scmd.state.sc.us>

Good Morning,

I concur with the plan, and no comments.

Jon

Reviewing Office	Document Title	Version
	Final Draft INRMP Clarkshill	Jun-22

Concurrence	*Select One*	
Concur	x	***(Concurred with the current draft of the document)***
Concurred with Comments		***(Concurrence with the documents after the edits below are incorporated)***
Non-Concur		***(Non-concur with the document. If you have significant issues with the document please contact us so that we may work to resolve those issues)***

Comment #	*The comment refers to the following location in the*						Comment	Reviewer	Office of Reviewer	Action Taken to Address the Comment
	Chapter	Section	Page	Paragraph	Line	Sentence				
							No Comment Jon Bird-Environmental Compliance			

SCARNG INRMP 2020 Update Draft Scoping and Review

Boazman, Rebecca <Rebecca.Boazman@scmd.sc.gov>

Tue 8/4/2020 11:37 AM

To: Susan.R.Boyd@usace.army.mil <Susan.R.Boyd@usace.army.mil>

Cc: Stone, Christopher <StoneC@tag.scmd.state.sc.us>;Anderson, Layne L. <AndersonLL@tag.scmd.state.sc.us>

Good Morning Ms. Boyd,

Please see the a ached Cover Le er regarding our FY 2020 CHTS INRMP.

The Cover Le er contains further instruc ons on how to access the CHTS INRMP documents to be reviewed. If you have any comments, ques ons, or issues, please do not hesitate to contact me via email: boazmanr@tag.scmd.state.sc.us or by phone: (803) 299-1343.

Thank you in advance for your me on this review.

Rebecca Boazman
Natural Resource Field Technician IV
McCrady Training Center
SC Army Na onal Guard
boazmanr@tag.scmd.state.sc.us
Ofc: (803) 299-1343

4 March, 2020

To: **US Army Corps of Engineers**
Susan Boyd
Shoreline and Real Estate Management
J. Strom Thurmond Project
510 Clarks Hill Highway
Clarks Hill, SC 29821

Re: Update of Integrated Natural Resource Management Plan (INRMP), South Carolina Army National Guard (SCARNG), INRMP for Clarks Hill Training Center (CHTC), McCormick County, South Carolina

The SCARNG is working on completing an update for the INRMP for CHTC in McCormick County, South Carolina. There is currently an INRMP for the site as required by the Sikes Act. The INRMP was originally approved by the U.S. Fish and Wildlife Service (USFWS) and the South Carolina Department of Natural Resources (SCDNR) in 2001 and the Review for Operation and Effect (ROE) was completed for CHTC in 2019. The INRMP update and review will ensure that all cooperating partners have an opportunity to review updates for the INRMP, provide input on the update, and affirm whether they consider the INRMP is effective for the site. Given the length of time since the original signature, the SCARNG updated INRMP is intended to reflect new data, new policies, and new requirements since 2001.

For this update, we are seeking input from your agency regarding areas of the INRMP that could use improvement, as well as areas that are working well. We are seeking from your agency any new or additional information, new natural resources topics or issues of concern, updates on policies or regulations, updates on rare flora and fauna listings and nearby observations, identification of issues of regional concern, or other new information that your agency thinks should be considered during this review and subsequent updating of the INRMP.

SCARNG will be updating INRMPs for both sites, McCrady Training Center and Clarks Hill Training Center. The updates will update content (now almost 20 years old) as well as the goals and objectives section which was completed in the 2019 Review for Operation and Effect.

We will be glad to host a meeting if it would be beneficial during the review period. Please review this and reply with any comments or concerns you may have regarding this document by **15 May 2020**. Please send correspondence or questions to me by PHONE or EMAIL.

Sincerely,

Chris Stone
Deputy Conservation Manager
SCARNG Environmental Office
5401 Leesburg Road, Building #3924
Eastover, SC 29044
803-299-2236
stonec@tag.scmd.state.sc.us

From: Boyd, Susan R CIV USARMY CESAS (USA) <Susan.R.Boyd@usace.army.mil>
Sent: Tuesday, August 4, 2020 2:57 PM
To: Boazman, Rebecca <BoazmanR@tag.scmd.state.sc.us>
Cc: Stone, Christopher <StoneC@tag.scmd.state.sc.us>; Anderson, Layne L. <AndersonLL@tag.scmd.state.sc.us>
Subject: RE: SCARNG INRMP 2020 Update Dra Scoping and Review

CAUTION: This email originated from outside your organizaon. Exercise cauon when opening a achments or clicking links, especially from unknown senders.

Rebecca,

Thank you for including us on the review of the dra FY2020 INRMP for the Clarks Hill Training Site. I will forward it to the involved pares within our office and we will provide comments to you no later than 3 Setpember.

Respecully ,

Susan R. Boyd
Chief Ranger, Shoreline Management
J. Strom Thurmond Project
510 Clarks Hill Highway
Clarks Hill, SC 29821
864-333-1140

To: Boyd, Susan R CIV USARMY CESAS (USA) <Susan.R.Boyd@usace.army.mil>
Subject: [Non-DoD Source] Re: SCARNG INRMP 2020 Update Dra. Scoping and Review

Susan,
Thank you, we look forward to your comments. Again, if you have any questions or concerns, do not hesitate to contact me.

Best,
Rebecca Boazman
Natural Resource Field Technician IV
McCrady Training Center
SC Army National Guard
boazmanr@tag.scmd.state.sc.us
Ofc: (803) 299-1343

RE: SCARNG INRMP 2020 Update Draft Scoping and Review

Boyd, Susan R CIV USARMY CESAS (USA) <Susan.R.Boyd@usace.army.mil>

Thu 9/3/2020 4:15 PM

To: Boazman, Rebecca <BoazmanR@tag.scmd.state.sc.us>

Cc: Boyd, Kenneth H CIV USARMY CESAS (US) <Kenneth.H.Boyd@usace.army.mil>;Brooks, Jeffrey J CIV USARMY CESAS (US) <Jeffrey.J.Brooks@usace.army.mil>;Murphy, Aaron E CIV USARMY CESAS (USA) <Aaron.E.Murphy@usace.army.mil>;Brashier, Evan G CIV USARMY USACE (USA) <Evan.G.Brashier@usace.army.mil>

Ms. Boazman,

Please find below comments from the U.S. Army Corps of Engineers regarding the Clarks Hill Training Center INRMP.

1. Page 4, Section 1.4.2. Annual Review and Coordination. The INRMP states that the SCARNG Conservation Manager will communicate annually with USFWS, SCDNR, and internal stakeholders to review the previous year's INRMP implementation and discuss implementation of upcoming programs and projects. Since the CHTC is located on USACE property, we request including USACE in this annual review and coordination in addition to the USFWS and SCDNR.
2. Page 23, Section 3.6, Objective 1. Forest Management. This section refers to historic accounts of longleaf pine forests. While longleaf pine forests historically ranged into this area, the predominant pine forest type on the CHTC is loblolly pine and management decisions are made based on the forest type currently on this site. While USACE is investing in restoration of longleaf pine on Thurmond Project, CHTC is not scheduled for significant longleaf pine restoration projects at this time.
3. Page 24, Section 3.8, Grounds. While SCARNG has primary responsibility for construction on CHTC, all construction and land-disturbing activities must be approved by USACE. We recommend including the requirement for USACE approval of all construction in this section of the INRMP.
4. Page 33, Section 4.2, Partnerships and Cooperative Agreements. We are not aware of any involvement of Bureau of Land Management directly on CHTC. While the CHTC is operated under a license agreement between USACE and the State of South Carolina, USACE is also very involved with the site as a partner in management of the resources on the site and should be included in this section.

Thank you for the opportunity to review and comment on the draft INRMP. Please let me know if you need the above comments in le[illegible]er form for your records.

Respectfully,

Susan R. Boyd
Chief Ranger, Shoreline Management
J. Strom Thurmond Project
510 Clarks Hill Highway
Clarks Hill, SC 29821
864-333-1140

SCARNG INRMP 2020 Update Draft Scoping and Review

Boazman, Rebecca <Rebecca.Boazman@scmd.sc.gov>

Tue 8/4/2020 3:09 PM

To: Caldwell, Mark <mark_caldwell@fws.gov>

Cc: Stone, Christopher <StoneC@tag.scmd.state.sc.us>;Anderson, Layne L. <AndersonLL@tag.scmd.state.sc.us>

Good morning Mr. Caldwell,

Please see the a ached Cover Le er regarding our FY 2020 CHTS INRMP.

The Cover Le er contains further instruc ons on how to access the CHTS INRMP documents to be reviewed. If you have any comments, ques ons, or issues, please do not hesitate to contact me via email: boazmanr@tag.scmd.state.sc.us or by phone: (803) 299-1343.

Thank you in advance for your me on this review.

Rebecca Boazman
Natural Resource Field Technician IV
McCrady Training Center
SC Army Na onal Guard
boazmanr@tag.scmd.state.sc.us
Ofc: (803) 299-1343

4 March, 2020

To: US Fish and Wildlife Service
Ecological Services Field Office
Mr. Mark Caldwell 1
76 Croghan Spur Road, Suite 200
Charleston, SC 29407-7558

Re: Update of Integrated Natural Resource Management Plan (INRMP), South Carolina Army National Guard (SCARNG), INRMP for McCrady Training Site, Richland County, South Carolina

The SCARNG is working on completing an update for the INRMP for McCrady Training Center (MTC) in Richland County, South Carolina. There is currently an INRMP for the site as required by the Sikes Act. The INRMP was originally approved by the U.S. Fish and Wildlife Service (USFWS) and the South Carolina Department of Natural Resources (SCDNR) in 2001 and the Review for Operation and Effect (ROE) was completed for MTC in 2019. The INRMP update and review will ensure that all cooperating partners have an opportunity to review updates for the INRMP, provide input on the update, and affirm whether they consider the INRMP is effective for the site. Given the length of time since the original signature, the SCARNG updated INRMP is intended to reflect new data, new policies, and new requirements since 2001.

For this update, we are seeking input from your agency regarding areas of the INRMP that could use improvement, as well as areas that are working well. We are seeking from your agency any new or additional information, new natural resources topics or issues of concern, updates on policies or regulations, updates on rare flora and fauna listings and nearby observations, identification of issues of regional concern, or other new information that your agency thinks should be considered during this review and subsequent updating of the INRMP.

SCARNG will be updating INRMPs for both sites, McCrady Training Center and Clarks Hill Training Sites. The updates will update content (now almost 20 years old) as well as the goals and objectives section which was completed in the 2019 Review for Operation and Effect.

We will be glad to host a meeting if it would be beneficial during the review period. Please review this and reply with any comments or concerns you may have regarding this document by **15 May 2020**. Please send correspondence or questions to me by PHONE or EMAIL.

Sincerely,

Chris Stone
Deputy Conservation Manager
SCARNG Environmental Office
5401 Leesburg Road, Building #3924
Eastover, SC 29044
803-299-2236
stonec@tag.scmd.state.sc.us

From: McCoy, Thomas <thomas_mccoy@fws.gov> on behalf of Charleston Regulatory, FW4 <charleston_regulatory@fws.gov>
Sent: Monday, August 17, 2020 10:14 AM
To: Boazman, Rebecca <BoazmanR@tag.scmd.state.sc.us>
Cc: Caldwell, Mark <mark_caldwell@fws.gov>
Subject: SCARNG INRMP 2020 Update Dra. Scoping and Review

Hello.
A ached is the Service's response le er for the draft scoping and review of the INRMP. If you have any ques ons, please let us know.
Tom

United States Department of the Interior
FISH AND WILDLIFE SERVICE
176 Croghan Spur Road, Suite 200
Charleston, South Carolina 29407

August 17, 2020

Rebecca Boazman
Natural Resource Technician IV
SCARNG Environmental Office
5401 Leesburg Road, Building #3924
Eastover, SC 29044

Re: Review of Draft INRMP, South Carolina Army National Guard, McCrady and Clarks Hill Training Sites, FWS Log No. 2019-CPA-0028

Dear Ms. Boazman:

The U.S. Fish and Wildlife Service (Service) has reviewed the South Carolina Army National Guard's (SCARNG) draft Integrated Natural Resources Management Plans (INRMP) for two training facilities in South Carolina, the McCrady Training Center in Richland County and Clarks Hill Training Center in McCormick County. The SCARNG is seeking comments to fulfill the requirements of the Sikes Act (16 U.S.C. §670a *et seq*.) regarding natural resources issues that must be addressed in the INRMPs such as, updates on policies or regulations or rare flora and fauna listings.

The Service is providing our comments separated by installation.

<u>McCrady Training Center (MTC) draft INRMP</u>

- Section 3.10, page 32, line 29 - the Green criteria has a description that does not make sense for the Success Criteria of Objective 1. It appears this is duplicate language from the Program Management Criteria of Section 3.1 (page 20, line 2). Please clarify or revise.
- This section provides for monitoring of existing populations of T&E Species. However, it is not clear whether there will be efforts to survey MTC for to locate additional individuals or populations of protected species. We recommend that new surveys be conducted periodically to locate unknown populations..
- Section 3.10 also specifies Special Status Species. Do Special Status Species include the Service's list of At-Risk species (ARS)? ARS are those species of concern that are currently under review by the Service to determine if listing under the ESA is warranted. We recommend that surveys for possible ARS at the MTC be conducted along with T&E species.
- Appendix E, Table E-1 lists the Carolina heelsplitter. While the heelsplitter is indeed a critically endangered species, it is considered extirpated from Richland County. The heelsplitter can be removed from this list.

Clark's Hill Training Center (CHTC) draft INRMP

- Recommend changing the SCDNR signatory from Alvin Taylor to Robert H. Boyles. Robert Boyles is the new director of SCDNR.
- Section 3.10, page 27, line 23 - the Green criteria has a description that does not make sense for the Success Criteria of Objective 1 (Similar to MTC INRMP). It appears this is duplicate language from the Program Management Criteria of Section 3.1 (page 14, line 1). Please clarify or revise.
- Section 3.10 also specifies Special Status Species. Do Special Status Species include the Service's list of At-Risk species (ARS)? ARS are those species of concern that are currently under review by the Service to determine if listing under the ESA is warranted. We recommend that surveys for possible ARS at the CHTC be conducted along with T&E species.

Please visit our Web site: https://www.fws.gov/southeast/pdf/fact-sheet/south-carolina-species-list-by-county.pdf for a list of species that have been petitioned for listing under the ESA, as well as Candidate Species or collectively referred to as "At-Risk Species" (ARS) for South Carolina. Although there are no Federal protections afforded to ARS, please consider including them in your project planning. Incorporating proactive measures to avoid or minimize harm to ARS may improve their status and assist with precluding the need to list these species. Additional information on ARS can be found at:

http://www.fws.gov/southeast/candidateconservation

The Service appreciates the opportunity to provide our comments for consideration in development of the two installation's INRMPs. If you have any questions on this matter, please contact Mark Caldwell at (843) 727-4707 ext. 215 or email at mark_caldwell@fws.gov and reference FWS Log No. 2019-CPA-0028.

Sincerely,

Thomas D. McCoy

Thomas D. McCoy
Field Supervisor

TDM/MAC

Re: SCARNG INRMP 2020 Update Draft Scoping and Review

Boazman, Rebecca <Rebecca.Boazman@scmd.sc.gov>

Tue 8/18/2020 8:36 AM

To: Charleston Regulatory, FW4 <charleston_regulatory@fws.gov>

Cc: Caldwell, Mark <mark_caldwell@fws.gov>

Mr. McCoy,
Good morning, we have reviewed your comments and recommenda ons made for our McCrady Training Center and Clarks Hill Training Site INRMPS. Below is a bulleted list addressing each comment/ques on you provided.

McCrady Training Center (MTC) dra. INRMP:

- Sec on 3.10, page 32, line 29: We have revised the Objec ve 1 Green Criteria to reflect the appropriate descrip on for the Success Criteria.
- In regards to the recommenda on for ARS/T&E Surveys, we are currently wrapping up a survey for currently listed ARS/T&E faunal species on McCrady. It should be completed at the end of the Federal FY for 2020.
- Sec on 3.10 Special Status Species: In the case of the MTC INRMP "Special Status Species" does include At-Risk Species, as listed and described by the USFWS. These species and their lis ng status can be found in Appendix E, Table E-1.
- We have edited the Appendix E, Table E-1, and have removed the Carolina heelsplit er from the list.

Clark's Hill Training Center (CHTC) draft INRMP:

- We have corrected the signature block for SCDNR to display Robert H. Boyles as the correct signatory authority.
- Sec on 3.10, page 27, line 23: We have revised the Objec ve 1 Green Criteria to reflect the appropriate descrip on for the Success Criteria.
- Just as it is for MTC, when the CTHS INRMP says "Special Status Species" this does include At-Risk Species, as listed and described by the USFWS. These species and their lis ng status can be found in Appendix E, Table E-1.

Again, we would like to thank you for your swift response and review, we greatly appreciate it.

The links to the documents provided in the Cover le er should s ll be correct and allow you to further access the documents if need be. If you have any further ques ons, comments, and/or concerns, please let me know.

Much obliged,
Rebecca Boazman
Natural Resource Field Technician IV
McCrady Training Center
SC Army Na onal Guard
boazmanr@tag.scmd.state.sc.us
Ofc: (803) 299-1343

RE: [EXTERNAL] Re: SCARNG INRMP 2020 Update Draft Scoping and Review

Caldwell, Mark <mark_caldwell@fws.gov>

Tue 8/18/2020 9:06 AM

To: Boazman, Rebecca <BoazmanR@tag.scmd.state.sc.us>

Cc: McCoy, Thomas <thomas_mccoy@fws.gov>

Rebecca,

Thank you for your quick action. At this time we have no additional comments and look forward to assisting the SCANG in the future.

Mark

Mark A. Caldwell
Deputy Field Supervisor
US Fish and Wildlife Service
South Atlantic-Gulf Region
South Carolina Ecological Services
176 Croghan Spur Road, Suite 200
Charleston, SC 29407
843-300-0426 (direct line)
843-870-0041 (cell)
843-300-0189 – facsimile

SCARNG INRMP 2020 Update Draft Scoping and Review

Boazman, Rebecca <Rebecca.Boazman@scmd.sc.gov>

Tue 8/4/2020 3:09 PM

To: SimmonsW@dnr.sc.gov <SimmonsW@dnr.sc.gov>

Cc: Stone, Christopher <StoneC@tag.scmd.state.sc.us>;Anderson, Layne L. <AndersonLL@tag.scmd.state.sc.us>

Good morning Mr. Simmons,

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Rebecca Boazman
Natural Resource Field Technician IV
McCrady Training Center
SC Army Na onal Guard
boazmanr@tag.scmd.state.sc.us
Ofc: (803) 299-1343

4 March, 2020

To: South Carolina Department of Natural Resources
Alvin A. Taylor
Rembert C. Dennis Building
1000 Assembly Street
Columbia, SC 29201

Re: Update of Integrated Natural Resource Management Plan (INRMP), South Carolina Army National Guard (SCARNG), INRMP for McCrady Training Site, Richland County, South Carolina

The SCARNG is working on completing an update for the INRMP for McCrady Training Center (MTC) in Richland County, South Carolina. There is currently an INRMP for the site as required by the Sikes Act. The INRMP was originally approved by the U.S. Fish and Wildlife Service (USFWS) and the South Carolina Department of Natural Resources (SCDNR) in 2001 and the Review for Operation and Effect (ROE) was completed for MTC in 2019. The INRMP update and review will ensure that all cooperating partners have an opportunity to review updates for the INRMP, provide input on the update, and affirm whether they consider the INRMP is effective for the site. Given the length of time since the original signature, the SCARNG updated INRMP is intended to reflect new data, new policies, and new requirements since 2001.

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We will be glad to host a meeting if it would be beneficial during the review period. Please review this and reply with any comments or concerns you may have regarding this document by **15 May 2020**. Please send correspondence or questions to me by PHONE or EMAIL.

Sincerely,

Chris Stone
Deputy Conservation Manager
SCARNG Environmental Office
5401 Leesburg Road, Building #3924
Eastover, SC 29044
803-299-2236
stonec@tag.scmd.state.sc.us

RE: SCARNG INRMP 2020 Update Draft Scoping and Review

Willie Simmons <SimmonsW@dnr.sc.gov>
Tue 9/8/2020 3:15 PM

To: Boazman, Rebecca <BoazmanR@tag.scmd.state.sc.us>

CAUTION: This email originated from outside your organization. Exercise caution when opening attachments or clicking links, especially from unknown senders.

Rebecca,
I have reviewed the document and I don't have any comments. Please let me know if you need anything else from me on the document.

Sincerely,

Willie

Re: SCARNG INRMP 2020 Update Draft Scoping and Review

Boazman, Rebecca <Rebecca.Boazman@scmd.sc.gov>
Wed 9/9/2020 8:56 AM

To: Willie Simmons <SimmonsW@dnr.sc.gov>

Mr. Simmons,

Thank you for your me on this r eview, we greatly appreciate it at this me w e do not need anything else.

Obliged,
Rebecca Boazman
Natural Resource Field Technician IV
McCrady Training Center
SC Army Naonal Guar d
boazmanr@tag.scmd.state.sc.us
Ofc: (803) 299-1343

J. RELEVANT LAWS, REGULATIONS, AND GUIDANCE

J.1 FEDERAL LAWS

American Indian Religious Freedom Act of 1978 (Public Law 95-341; 42 United States Code [USC] §1196) – requires the US, where appropriate, to protect and preserve religious rights of the American Indian, Eskimo, Aleut, and Native Hawaiians, including but not limited to access to sites, use and possession of sacred objects, and the freedom to worship through ceremonials and traditional rites.

Animal Damage Control Act of 1931 (7 USC §426 *et seq*.) – provides broad authority for investigation, demonstrations and control of mammalian predators, rodents and birds.

Anti-Deficiency Act of 1982 (31 USC §1341 *et seq.*) - provides that no federal official or employee may obligate the government for the expenditure of funds before funds have been authorized and appropriated by Congress for that purpose.

American Antiquities Act of 1906 (Public Law 59-209; 16 USC §431-433) – authorizes the President to designate historic and natural resources of national significance, located on federal lands, as National Monuments for the purpose of protecting items of archeological significance.

Archeological and Historical Preservation Act of 1974 (Public Law 95-96; 16 USC §469 *et seq*.) – provides for the preservation of historical and archeological data, including relics and specimens, threatened by federally funded or assisted construction projects.

Archeological Resources Protection Act of 1979 (16 USC §470 *et seq*.) – prohibits the excavation or removal from federal or Indian lands any archeological resources without a permit.

Bald Eagle Protection Act of 1940 (Public Law 87-884; 16 USC §668a-d) – prohibits the taking or harming (i.e. harassment, sale, or transportation) of bald eagles or golden eagles, including their eggs, nests, or young, without appropriate permit.

Clean Air Act of 1970 (42 USC §7401 *et seq*.) – regulates air emissions from stationary, area, and mobile sources. This law authorizes the US Environmental Protection Agency (USEPA) to establish National Ambient Air Quality Standards (NAAQS) to protect public health and the environment.

Clean Water Act of 1972 (Public Law 92-500; 33 USC §1251 *et seq*.) – aims to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Under Section 401, states have authority to review federal permits that may result in a discharge to wetlands or water bodies under state jurisdiction. Under section 404, a program is established to regulate the discharge of dredged or fill material into the Nation's waters, including wetlands.

Coastal Zone Management Act of 1972 (Public Law 92-583; 16 USC §1451 *et seq.*) – provides incentives for coastal states to develop coastal zone management programs. Federal actions that impact the coastal zone must be consistent to the maximum extent practicable with the state program.

Conservation and Rehabilitation Program on Military and Public Lands (Public Law 93-452; 16 USC §670 *et seq*.) – provides for fish and wildlife habitat improvements, range rehabilitation, and control of off-road vehicles on federal lands.

Conservation Programs on Military Reservations (Public Law 90-465; 16 USC §670 *et seq.*) – Requires each military department to manage natural resources and to ensure that services are provided which are necessary for management of fish and wildlife resources on each installation; to provide their personnel

with professional training in fish and wildlife management; and to give priority to contracting work with federal and state agencies that have responsibility for conservation or management of fish and wildlife. In addition, it authorizes cooperative agreements (with states, local governments, non-governmental organizations, and individuals) which call for each party to provide matching funds or services to carry out natural resources projects or initiatives.

Defense Appropriations Act of 1991 (Legacy Program) – establishes the "Legacy Resource Management Program" for natural and cultural resources with emphasis is on inventory and stewardship responsibilities.

Emergency Wetlands Resources Act of 1986 (16 USC §3901-3932) – requires reporting of wetland loss by the Secretary to Congress; authorizes the purchase of wetlands; requires the Secretary to establish a National Wetlands Priority Conservation Plan; and requires states to include wetlands in their Comprehensive Outdoor Recreation Plans, among others.

Endangered Species Act of 1973, as amended (16 USC §1531 *et seq.*) – provides for the identification and protection of threatened and endangered plants and animals, including their critical habitats. Requires federal agencies to conserve threatened and endangered species and cooperate with state and local authorities to resolve water resources issues in concert with the conservation of threatened and endangered species. This law establishes a consultation process involving federal agencies to facilitate avoidance of agency action that would adversely affect species or habitat. Further, it prohibits all persons subject to US jurisdiction from taking, including any harm or harassment, endangered species.

Federal Insecticide, Fungicide, and Rodenticide Act of 1947 (Public Law 92-516; 7 USC §136 *et seq*.) – governs the use and application of pesticides in natural resource management programs. This law provides the principal means for preventing environmental pollution from pesticides through product registration and applicator certification.

Federal Land Policy and Management Act of 1976 (43 USC §1701) – establishes public land policy and guidelines for its administration and provides for the management, protection, development, and enhancement of the public lands.

Fish and Wildlife Conservation Act of 1980 (Public Law 96-366; 16 USC §2901 *et seq.*) – encourages management of non-game species and provides for conservation, protection, restoration, and propagation of certain species, including migratory birds threatened with extinction.

Fish and Wildlife Coordination Act of 1934 (16 USC §661 *et seq*.) – provides a mechanism for wildlife conservation to receive equal consideration and coordinate with water-resource development programs.

Military Reservations and Facilities: Hunting, Fishing and Trapping (an update to the Military Construction Authorization Act; 10 USC §2671) – dictates that the Secretary of Defense require that all hunting, fishing, and trapping on military installations be in accordance with the fish and game laws of the State in which it is located, that license be obtained (except with respect to members of the armed forces), and that safety protocols be enacted.

Land and Water Conservation Act of 1965 (16 USC §4601 *et seq*.) – assists in preserving, developing, and assuring accessibility to outdoor recreation resources.

Migratory Bird Conservation Act of 1929 (16 USC §715 *et seq*.) – establishes a Migratory Bird Conservation Commission to approve areas recommended by the Secretary of the Interior for acquisition with Migratory Bird Conservation Funds.

Migratory Bird Treaty Act of 1918 (Public Law 65-186; 16 USC §703 *et seq.*) – provides for regulations to control taking of migratory birds, their nests, eggs, parts, or products without the appropriate permit and provides enforcement authority and penalties for violations.

National Environmental Policy Act of 1969 (Public Law 91-190; 42 USC §4321 *et seq.*) – mandates federal agencies to consider and document environmental impacts of proposed actions and legislation. In addition, it mandates preparation of comprehensive environmental impact statements where proposed action is "major" and significantly affects the quality of the human environment.

National Historic Preservation Act of 1966, as amended (PL 89-665; 16 USC §470 et seq.) – directs federal agencies to take into account the effect of any undertaking (a federally funded or assisted project) on historic properties.

Native American Graves Protection and Repatriation Act of 1990 (Public Law 101-601; 25 USC §3001-3013) – addresses the recovery, treatment, and repatriation of Native American and Native Hawaiian cultural items by federal agencies and museums. It includes provisions for data gathering, reporting, consultation, and issuance of permits.

Non-Indigenous Aquatic Nuisance Prevention and Control Act of 1990 – created the Aquatic Nuisance Species Task Force which is committed to preventing and controlling aquatic nuisance species and implementing the act.

Noxious Plant Control Act (PL 90-583) – provides for the control and management of nonindigenous weeds that injure or have the potential to injure the interests of agriculture and commerce, wildlife resources, or the public health.

Plant Protection Act of 2000[2] (7 USC §7701 et seq.) (replaces Federal Noxious Weed Act of 1973 [PL 93-629] – authorizes the USDA to prohibit or restrict the importation or interstate movement of any plant, plant product, biological control organism, noxious weed, article, or means of conveyance if the Secretary of Agriculture determines it is necessary to prevent introduction or spread of plant pests or noxious weeds.

Plant Quarantine Act (7 USC §151-167) – regulates the importation and interstate movement of nursery stock and other plants that may carry pests and diseases that are harmful to agriculture.

Readiness and Environmental Protection Initiative (within Section 2811, FY 2003 National Defense Authorization Act) (10 USC §2684a) – outlines agreements to limit encroachments and other constraints on military training, testing, and operations.

Resource Conservation and Recovery Act of 1976 (42 USC §6901 *et seq.*) – establishes a comprehensive program which manages solid and hazardous waste. Subtitle C, Hazardous Waste Management, sets up a framework for managing hazardous waste from its initial generation to its final disposal. Waste pesticides and equipment/containers contaminated by pesticides are included under hazardous waste management requirements.

Sikes Act Improvement Act of 1997 (Public Law 105-85; 16 USC §670a *et seq.*) – amends the Sikes Act of 1960 to mandate the development of an integrated natural resources management plan through cooperation with the Department of the Interior (through the US Fish and Wildlife Service [USFWS]),

[2] Replaces Federal Noxious Weed Act of 1974 (Public Law 93-629; 7 USC §2801).

Department of Defense, and each state fish and wildlife agency for each military installation supporting natural resources.

Soil Conservation Act of 1935 (16 USC §590a *et seq*.) – provides for soil conservation practices on federal lands.

Watershed Protection and Flood Prevention Act (PL 84-566; 16 USC §1001-1009) – the Soil Conservation Service at the Department of Agriculture provides planning assistance and construction funding for projects constructed by local sponsors, often in the form of flood control districts.

J.2 FEDERAL REGULATIONS

15 Code of Federal Regulations [CFR] 930 – Federal Consistency with Approved Coastal Management Programs

32 CFR 190 – Natural Resources Management Program

40 CFR 6 – USEPA Regulations on Implementation of NEPA Procedures

40 CFR 162 – USEPA Regulations on Insecticide, Fungicide, and Rodenticide Use

40 CFR 1500-1508 – Council on Environmental Quality (CEQ) Regulations on Implementing National Environmental Policy Act (NEPA) Procedures

50 CFR 17 – USFWS list of Endangered and Threatened Wildlife

50 CFR 10.13 – List of Migratory Birds

32 CFR 651 – Environmental Effects of Army Actions

J.3 FEDERAL EXECUTIVE ORDERS (EOS)

Environmental Safeguard for Activities for Animal Damage Control on Federal Lands (EO 11870) - restricts the use of chemical toxicants for mammal and bird control.

Exotic Organisms (EO 11987) – restricts federal agencies in the use of exotic plant species in any landscape and erosion control measures.

Floodplain Management (EO 11988) – specifies that agencies shall encourage and provide appropriate guidance to applicant to evaluate the effects of their proposals in floodplains prior to submitting applications. This includes wetlands that are within the 100-year floodplain and especially discourages filling.

Off-Road Vehicles on Public Lands (EO 11989[3]) – establishes criteria for designating public lands as open, limited or closed to the use of off-road vehicles (ORVs) and establishes rules for use and operation of ORVs in order to protect the resources of the public lands, to promote safety, and to minimize conflicts among various users.

Protection of Wetlands: Amends Executive Order 11990 (EO 12608) – directs all federal agencies to take action to minimize the destruction loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands. This applies to the acquisition, management, and disposal of federal lands and facilities; to construction or improvements undertaken, financed, or assisted by the

[3] Amends Executive Order 11644.

federal government; and to the conduct of federal activities and programs which affect land use.

Protection and Enhancement of Environmental Quality: Amends Executive Order 11514 (EO 11991) – provides for environmental protection of federal lands and enforces requirements of NEPA.

Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (EO 12898) – requires environmental protection for all communities by focusing federal attention on the environmental and human health effects of federal actions on minority and low-income populations.

Energy Efficiencies and Water Conservation at Federal Facilities (EO 12902) – federal agency use of energy and water resources is directed towards the goals of increased conservation and efficiency.

Indian Sacred Sites (EO 13007) – provides for the protection of and access to Indian sacred sites.

Protection of Children from Environmental Health Risks and Safety Risks (EO 13045) – requires that the USEPA evaluate the effects of a planned regulation on children and explain why the regulation is preferable to potentially effective and reasonably feasible alternatives.

Invasive Species (EO 13112) – directs federal agencies to prevent the introduction of invasive species and provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause.

Greening the Government through Leadership in Environmental Management (EO 13148) – requires the head of each federal agency to be responsible for ensuring that all necessary actions are taken to integrate environmental accountability into agency day-to-day decision making and long-term planning processes across all agency missions, activities, and functions.

Consultation and Coordination with Indian Tribal Governments (EO 13175) – ensures that all federal departments and agencies consult with Indian tribes and respect tribal sovereignty as they develop policy on issues that impact Indian communities.

Responsibilities of Federal Entities to Protect Migratory Birds (EO 13186) – directs all federal agencies taking actions that have a potential to negatively affect migratory bird populations to develop and implement a Memorandum of Understanding with the USFWS by January 2003 that shall promote the conservation of migratory bird populations.

Strengthening Federal Environmental, Energy, and Transportation Management (EO 13423) – requires federal agencies to lead by example in advancing the nation's energy security and environmental performance by establishing new and updated goals, practices, and reporting requirements for environmental, energy, and transportation performance and accountability.

Facilitation of Hunting Heritage and Wildlife Conservation (EO 13443) – directs the Department of the Interior and its component agencies, bureaus and offices facilitate the expansion and enhancement of hunting opportunities and the management of game species and their habitat.

Executive Order 13148: Greening the Government Through Leadership in Environmental Management (2000). – requires federal laboratories, testing facilities, maintenance facilities, hospitals, and others with operations that interact with the environment across all federal departments and agencies to implement an Environmental Management System (EMS) by December 31, 2005.

Presidential Memorandum, Government-to-Government Relations with Native American Tribal Governments (1994)– outlines principles that federal executive departments and agencies must follow in their interactions with Native American tribal governments such that the federal government operates within a government-to-government relationship with federally-recognized Native American Tribes.

J.4 DEPARTMENT OF DEFENSE DIRECTIVE (DODD), DEPARTMENT OF DEFENSE INSTRUCTION (DODI), ARMY REGULATION (AR), & ARMY NATIONAL GUARD REGULATION (ARNG)

DoDD 4150.7, DoD Pest Management Program

DoDD 4700.4, Natural Resources Management Program[4]

DoDD 4710.1, Archaeological and Historic Resources Management

DoDD 4715.1E, Environment, Safety, and Occupational Health

DoDD 6050.1, Environmental Effects in the US of DoD Actions

DoDD 6050.2, Use of Off-Road Vehicles on DlD Lands

DoDI 4150.07, Pest Management Program

DoDI 4165.57, Air Installations Compatible Use Zones

DoDI 4715.03, Natural Resources Conservation Program

DoDI 4715.1, Environmental Security

DoDI 4715.9, Environmental Planning and Analysis

DoDI 6055.06, Fire and Emergency Services Program

Department of Defense, American Indian and Alaska Native Policy

AR 200-1 Environmental Protection and Enhancement dated 13 December 2007

AR 210-9 – Use of Off-Road Vehicles on Army Lands

AR 215-1 – Morale, Welfare, and Recreation Activities and Non-Appropriated Fund Instrumentalities

AR 315-19 – The Army Sustainable Range Program

AR 405-80 – Management of Title and Granting Use of Real Estate

AR 420-40 – Historic Preservation

AR 420-90 – Fire and Emergency Services

ARNG Guidance for the Creation, Implementation, Review, and Revision and Update of INRMPs dated 9 April 2012

J.5 DEPARTMENT OF DEFENSE MEMORANDA

Memorandum, Assistant Deputy Under Secretary of Defense (Environment, Safety and Occupational Health), 20 Sept 11, Subject: *Interim Policy on Management of White Nose Syndrome in Bats*.

Memorandum, Assistant Deputy Under Secretary of Defense (Environment, Safety and Occupational Health), 3 Apr 07, Subject: *Guidance to Implement the Memorandum of Understanding to Promote the Conservation of Migratory Birds*.

[4] Cancels DoD Directive 4700.1. Replaced by 32 CFR 190 – Natural Resources Management Program.

Memorandum, Assistant Deputy Under Secretary of Defense (Environment, Safety and Occupational Health), 14 Aug 06, Subject: *Integrated Natural Resource Management Plan (INRMP) Template*

Memorandum, Assistant Deputy Under Secretary of Defense (Environment, Safety and Occupational Health), 17 May 05, Subject: *Implementation of Sikes Act Improvement Amendments: Supplemental Guidance concerning Leased Lands*

Memorandum, Assistant Deputy Under Secretary of Defense (Environment, Safety and Occupational Health), 1 Nov 04, Subject: *Implementation of Sikes Act Improvement Amendments: Supplemental Guidance concerning INRMP Reviews*

Memorandum, Deputy Under Secretary of Defense (Installations and Environment), 10 Oct 02, Subject: *Implementation of Sikes Act Improvement Act: Updated Guidance*

Memorandum, Assistant Deputy Under Secretary of Defense (Environment), 5 Aug 02, Subject: *Access to Outdoor Recreation Programs on Military Installations for Persons with Disabilities*.

Memorandum, Assistant Secretary of Army (Environment, Safety and Occupational Health), Deputy Assistant Secretary of the Navy (Environment), Deputy Assistant Secretary of the Air Force (Environment, Safety and Occupational Health), 20 Sep 11, *Subject: Interim Policy on Management of White Nose Syndrome in Bats*.

Memorandum, DAIM-ED Guidance for Implementation of the Sikes Act Improvement Act (SAIA) (Updated), 25 May 2006, Subject: *USFWS and State involvement in developing INRMPs; defining "mutual agreement" with the USFWS and the appropriate State agency; and coordinating INRMPs with other planning statutes.*

Memorandum, DAIM-ZA (200-3), 04 September 2002, Subject: *Army Wildland Fire Policy Guidance*.

Memorandum, US Army, 21 March 1997, Subject: *Army Goals and Implementing Guidance for Natural Resources Planning Level Surveys (PLS) and INRMP ("Army INRMP Policy")*.

Memorandum, Army National Guard Directorate, Environmental Programs Division (ARNG-ILE), 9 April 2012, Subject: *Guidance for the Creation, Implementation, Review, and Revision and Update of INRMPs*.

J.6 U.S. FISH AND WILDLIFE SERVICE (USFWS) GUIDANCE

USFWS Guidelines for Coordination on Integrated Natural Resource Management Plans (June 2015). Provides updated guidance to USFWS personnel for implementing the requirements of the Sikes Act. It replaces the following memorandum: *Guidance for Coordination of Department of Defense Sikes Act Integrated Natural Resource Management Plans (June 8, 2001).*

K. NEPA

Document 1. 2001 FONSI

FINDING OF NO SIGNIFICANT IMPACT
For
Implementation of an
Integrated Natural Resources Management Plan at
South Carolina Army National Guard's
Clarks Hill Training Center

McCormick County, South Carolina

The South Carolina Army National Guard (SCARNG) has prepared an Integrated Natural Resources Management Plan (INRMP) and Environmental Assessment (EA) for Clark's Hill Training Center (CHTC), a 735-acre military training installation located within the Strom Thurmond Project Forest Area, which is managed by the U.S. Army Corps of Engineers, in McCormick County, South Carolina. The INRMP is a comprehensive management plan designed to guide natural resources management at the installation for fiscal years 2002-2006 in support of the military training mission and in accordance with applicable environmental laws and regulations. The EA was prepared in accordance with the National Environmental Policy Act, the Council on Environmental Quality (CEQ) Regulations, and Army Regulation 200-2 *Environmental Effects of Army Actions.*

A. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES

Proposed Action.—The SCARNG proposes to manage natural resources at CHTC through the development and implementation of an INRMP. The purpose of the INRMP is to preserve, improve, and enhance natural resources system integrity and ensure that natural resources conservation measures and Army activities on mission lands are integrated and consistent with federal stewardship requirements. The INRMP ensures that the SCARNG can meet its mission needs at CHTC now and into the future, and that the natural resources that provide the training environment are ecologically sustainable over the long-term.

The Sikes Act (Title 16, United States Code 670a *et seq.*) as amended, Department of Defense Instruction 4715.3 *Environmental Conservation Program* (03 May 96), and Army Regulation 200-3 *Natural Resources – Land, Forest and Wildlife Management* (28 Feb 95) require the development and implementation of an INRMP. The Sikes Act provides the primary legal basis for the Secretary of Defense to carry out a program that provides for the conservation and rehabilitation of natural resources on military installations.

Alternatives Considered.—In addition to the Proposed Action, two alternatives for implementing the INRMP at CHTC were identified:

1. *No-Action.* In accordance with regulations promulgated by the CEQ 43 Code of Federal Regulations (CFR), Part 1500, Section 1502.14(d), a "No-Action" alternative must be evaluated. The No-Action alternative would not immediately change CHTC's management direction or the level of management intensity. Although CHTC would continue to operate under existing natural resources management programs, existing programs do not currently meet the requirements of the Sikes Act, AR 200-3, or DoD Instruction 4715.3. The No-Action alternative would not provide an integrated

approach to natural resources management in the immediate future, but would, for the most part, continue traditional management of individual components of natural resources that are designed to protect selected aspects of the ecosystem.

2. *Limited Implementation of the INRMP*: This alternative would develop an INRMP that meets requirements of the Sikes Act and Army policy, but does not provide an integrated approach to natural resources management. It would be implemented on an extended schedule. The Limited Implementation alternative did not meet the needs of natural resources management at CHTC in a timely manner nor did it adopt an integrated approach to management; therefore, the Limited Implementation Alternative was not carried forth for analysis in the Environmental Assessment.

B. ENVIRONMENTAL IMPACT ANALYSIS

The EA indicates that implementation of the INRMP would result in beneficial effects or no significant adverse effects to the following resources: land use, air quality, noise, geology and soils, water resources, biological resources, cultural resources, facilities, socioeconomics, environmental justice, protection of children, and hazardous wastes/materials. Although no significant impacts are expected from implementing the No Action alternative, continuation of existing management procedures has the potential to result in adverse effects over the long-term from not establishing a comprehensive approach for natural resources management and evaluation. The No Action alternative would also result in violating the Sikes Act requirements.

C. MITIGATION

No mitigation measures will be required as a result of implementing the INRMP at CHTC. Implementation of the INRMP is predominantly a management decision that will not of itself cause any negative impacts to CHTC's natural resources, and will result in better protective measures for those natural resources. Individual projects undertaken at a later date in compliance with the procedures outlined in the INRMP may result in actions that could require mitigation measures. Appropriate mitigation measures will be identified and implemented at that time, as warranted.

D. REGULATIONS

There are no indications that implementation of the proposal will violate any federal, state, or local environmental laws or regulations. The proposed action would not violate the National Environmental Policy Act (42 USC § 4321 to 4370e), its regulations as promulgated by the Council on Environmental Quality (40 CFR Parts 1500-1508), Army Regulation 200-2, *Environmental Effects of Army Actions*, or any other federal, state, or local environmental laws or regulations. The EA documents the status of project compliance with applicable federal environmental statutes and executive orders.

E. PUBLIC REVIEW

The draft INRMP and EA were made available for public review from October 1-16, 2001. No public comments were received.

The final INRMP, EA and FNSI are available for review at Richland County Public Library, 1431 Assembly Street, Columbia, South Carolina, 29201 [Tel. (803) 799-9084] during normal business hours.

Written comments on the final INRMP, EA and this Finding of No Significant Impact by any interested party may be submitted within 15 days of the Notice of Availability's publication. Send comments to: South Carolina Army National Guard, Adjutant General's Office (Attn: Bryan Hall), 1 National Guard Road, Columbia, South Carolina, 29210.

F. FINDING OF NO SIGNIFICANT IMPACT

Careful review of the EA has indicated that implementation of an INRMP at the CHTC will not have any adverse significant impact on the quality of the existing natural or human environment. The Proposed Action will allow SCARNG to achieve its primary mission of maintaining military readiness while balancing the sustainability of desired military training area conditions and ecosystem viability at CHTC. The requirements of the National Environmental Policy Act and the Council on Environmental Quality regulations have been satisfied, and an Environmental Impact Statement will not be prepared.

Date: 30 Oct 01

RICHARD O. MURPHY
Colonel, NGB
Chief, Environmental Programs
Division