

APPENDIX A

ENVIRONMENTAL ASSESSMENT

FOR

THE IMPLEMENTATION OF
THE REVISED INTEGRATED NATURAL RESOURCES
MANAGEMENT PLAN

FOR THE VOLUNTEER TRAINING SITE – CATOOSA

TENNESSEE ARMY NATIONAL GUARD
CATOOSA COUNTY, GEORGIA

PREPARED BY
Tennessee Military Department
Environmental Office

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FOR
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MANAGEMENT PLAN, VOLUNTEER TRAINING SITE CATOOSA
TENNESSEE ARMY NATIONAL GUARD**

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ACRONYMS AND ABBREVIATIONS

AR	Army Regulations
BMP	Best Management Practices
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
DA	Department of the Army
DBH	Diameter at Breast Height
DoD	Department of Defense
EA	Environmental Assessment
EIS	Environmental Impact Statement
EO	Executive Order
ESMC	Endangered Species Management Component
FIFRA	Federal Insecticide, Fungicide, and Rodenticide Act
FNSI	Finding of No Significant Impact
ICRMP	Integrated Cultural Resources Management Plan
INRMP	Integrated Natural Resources Management Plan
IPP	Invasive Pest Plants
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NGB	National Guard Bureau
NRHP	National Register of Historic Places
NWI	National Wetland Inventory
RTE	Rare, Threatened, or Endangered species
SHPO	State Historic Preservation Officer
SMZ	Streamside Management Zone
SPCC	Spill Prevention Control and Countermeasure
TA	Training Area
TMDL	Total Maximum Daily Load
TNARNG	Tennessee Army National Guard
USC	United States Code
USDA	United States Department of Agriculture
USPFO	United State Purchasing Fiscal Office
VTs-C	Volunteer Training Site – Catoosa

1.0 PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

In 2001, the Tennessee Army National Guard (TNARNG) implemented an Integrated Natural Resources Management Plan (INRMP) for the purpose of guiding land management activities on the Volunteer Training Site – Catoosa (VTS-C) in Catoosa County, Georgia, for the period 2002-2006. It was determined that a full revision of the document would be needed to guide future management due to the discovery of two federally listed species, the development of a forest management plan, and the need for more comprehensive guidance. To that end, the TNARNG, in cooperation with the U.S. Fish and Wildlife Service, Athens Field Office, and the Georgia Department of Natural Resources, Wildlife Resources Division, developed a Revised INRMP for the VTS-C. The revised INRMP includes a newly developed forest management and timber harvest program as well as a rare species management program for the federally listed large-flowered skullcap (*Scutellaria montana*) and gray bat (*Myotis grisescens*), both of which were not covered in the original INMRP or environmental assessment (EA). The purpose of this EA is to evaluate the impacts of implementing this Revised Integrated Natural Resources Management Plan.

This environmental assessment has been prepared in accordance with the National Environmental Policy Act (NEPA) and its implementing regulations as published by the Council on Environmental Quality (CEQ) (40 Code of Federal Regulations (CFR) 1500-1508) as well as 32 CFR 651, *Environmental Analysis of Army Actions*; National Guard Bureau (NGB) “All States” Memoranda on NEPA policy guidance; and the NGB NEPA Handbook, June 2006. Collectively, these regulations and the guidance thereto establish a process by which the Department of the Army (DA) considers and documents the potential environmental and socioeconomic effects of proposed actions and alternatives and then invites comments of interested citizens and organizations prior to deciding on a final course of action. If the analysis presented in this EA indicates implementation of the proposed action would *not* result in significant environmental or socioeconomic impacts, then a Finding of No Significant Impact (FNSI) will be prepared. If a significant impact would result that cannot be mitigated, issuance of a notice to prepare an environmental impact statement (EIS) would be required. CEQ regulations specify that an EA should:

- briefly provide evidence and analysis for determining whether to prepare an EIS or a FNSI
- aid in an agency’s compliance with NEPA when an EIS is unnecessary
- facilitate preparation of an EIS when one is necessary

This NEPA review assesses known, potential, and reasonably foreseeable environmental consequences related to strategies presented in this INRMP. However, this NEPA review does not comprehensively assess environmental effects of specific projects presented in this INRMP. Therefore, additional NEPA analysis could be required prior to the implementation of certain actions or projects (e.g., prescribed burning, timber harvests). Furthermore, because the plan will be modified over time, additional environmental analyses pursuant to NEPA may be required if new management measures are developed for the long-term (i.e., beyond five years).

1.2 PURPOSE AND NEED

The Sikes Act, as amended, states “the Secretary of each military department shall prepare and implement an integrated natural resources management plan for each military installation in the United States under the jurisdiction of the Secretary, unless the Secretary determines that the absence of significant natural resources on a particular installation makes preparation of such a plan inappropriate” (16 U.S. Code

(USC) 670a et seq.). The VTS-C consists of approximately 1600 acres and contains significant natural resources, including two federal threatened and endangered species. Therefore, the TNARNG has prepared an INRMP for the VTS-C as a means of ensuring compliance with the Sikes Act.

The purpose of the proposed action is to guide land management on VTS-C to provide for the effective, long-term management of the site's natural resources while allowing the training mission to proceed. Key features of this management program are to provide for the conservation and rehabilitation of natural resources including soil, water, vegetation, and wildlife resources; the protection of rare, threatened, and endangered species; and the maintenance of healthy, functional ecosystems to support military training.

The proposed action is needed in order to ensure natural resources are managed effectively on the VTS-C while allowing the training mission to be accomplished and to maintain compliance with the Sikes Act, as amended, Department of Defense (DoD) Instruction 4715.3 (Environmental Conservation Program), and Army Regulation (AR) 200-1 (Environmental Protection and Enhancement), and applicable NGB and DoD guidance.

1.3 SCOPE OF THE DOCUMENT

Two courses of action are considered under this EA: The Proposed Action and the No Action Alternative. The Proposed Action evaluated in this EA would be for TNARNG to implement the Revised Integrated Natural Resources Management Plan for VTS-Catoosa. Management would include actions for the protection of the federal threatened and endangered species found on the site, management of timber resources for forest health and training needs, protection of soil and water resources through erosion prevention and repair, and maintenance of other environmental values. The No Action Alternative considered under this EA would result in no new management plan implementation but a continuation of management according to the 2002-2006 INRMP for VTS-C.

2.0 DESCRIPTION OF THE PROPOSED ACTION (THE PREFERRED ALTERNATIVE)

The Proposed Action is to implement the Revised INRMP for the VTS-C to guide natural resources on that facility. This action is designed to support the military mission by protecting and enhancing training lands (vegetation, soils, water quality, and wildlife) while providing quality conditions for training. This action would comply with the requirements of the Sikes Act and AR 200-1.

The Revised INRMP has been updated with recent survey data and streamlined to provide easy-to-understand guidance for training site managers, personnel, and users. The Revised INRMP also contains four recently developed specific management components: the Endangered Species Management Plan for large-flowered skullcap and gray bat, the forest management plan, the prescribed fire plan, and the invasive pest plant control plan.

The Revised INRMP identifies multiple natural resources management goals and the objectives and tasks that are necessary to accomplish those goals for integrated, sustainable land management at the VTS-C. It also outlines training and equipment needed to support natural resources goals. These goals, objectives, and tasks are identified in Chapter 4 of the Revised INRMP for the key resource areas defined by the Sikes Act:

- Ecosystem Management
- Rare, Threatened, and Endangered (RTE) Species

- Erosion Control and Soil Conservation
- Watershed Management
- Wetlands Protection
- Forest Management
- Fire Management
- Fish and Wildlife Management
- Pest Management
- Grounds Maintenance
- Recreational Use Management
- Cultural Resources Management
- Geographic Information Systems:

The objectives and the tasks, or projects, associated with each of the objectives are presented in Table 4.3 of the Revised INRMP (p. 81 *et seq.*). Most of the actions proposed by the INRMP have low impact on the environment (e.g., surveys, monitoring, and environmental education for staff) or are distinctly beneficial to the environment (e.g., erosion control and rehabilitation, RTE protection). Activities which involve more complex interactions with the environment include forest management, prescribed fire, invasive species control, and experiments with one of the RTE species on site (large-flowered skullcap).

Forestry

The forest management plan (see Annex 2 of the INRMP) presents a prioritized schedule of timber harvests for the improvement of forest health and quality and for the development of additional training situations. Harvests fall into two types: thinning all trees below the dominant/co-dominant level to lessen competition and create room for dominant individuals to grow more quickly and small group selection harvests in which areas of 2-10 acres will be cleared to encourage regeneration of desirable oak species and create uneven-aged mosaic conditions.

Approximately 610 acres are scheduled for harvest according to this plan which covers 17 years of management activity. Other stands will be reconsidered following the next forest inventory in 2015 and may be added to the harvest plan. No more than 60 acres will be harvested in any one year. Stands cut in successive years will be distributed across multiple training areas to minimize impact to wildlife habitat in any one portion of the installation at a given time.

A buffer of at least 50 feet on each side of the creeks will be protected for maintenance of riparian qualities; several of the narrow stands of bottomland hardwoods will therefore not be subject to any timber harvest. In all harvests, the large-flowered skullcap management groups plus a 50 foot buffer will be withheld – there will be no cutting of any trees within these areas. These two buffer protections will result in actual timber management on less than 610 acres in total.

Wildland Fire

Prescribed fire (see Annex 3 of the INRMP) will be utilized on VTS-C for the purposes of reducing fuel load and wildfire threat, creating and maintaining training conditions, controlling invasive species, and to encourage oak regeneration. Riparian areas (50 foot buffer on either side of the waterway) and large-flowered skullcap management groups (50 foot buffer surrounding) will be protected from fire (with the exception of experimental groups (see below)).

For the most part, fire will be used on the managed grasslands of the training site, e.g., the ranges. These areas will be burned on a 1-2 year rotation. Forested areas may be burned on a longer rotation (typically 6 years for hardwood stands, 3 years for mixed pine/hardwood stands) as needed for fuel control or

training area maintenance. Areas with substantial rare species value (e.g., training area 2) will not be subject to prescribed fire.

Invasive Species Control

This revision of the INRMP provides more detailed instructions for the control of invasive pest plants (IPP) (see Annex 4 of the INRMP) than the original plan. A number of non-native plants have invaded the ecosystems of VTS-C and altered conditions and biodiversity. Control of these problem species will involve the application of herbicides.

The principle species to be controlled on VTS-C are tree-of-heaven, mimosa, princess tree, wintercreeper, woolly mullein, privet, Japanese honeysuckle, and Nepal grass. The chemicals to be used include glyphosate, Garlon 3A, Garlon 4, and Arsenal. The most controlled methods of application will be used when feasible: cut stump treatment and stem injection. For small diameter trees or saplings, basal bark spray is the method of choice. Foliar spray will be used for species (e.g., honeysuckle, Nepal grass, and wintercreeper) which are not easily subject to the other methods and for resprouts of previously treated individuals. Methods will follow recommendations by Miller (2003).

All appropriate precautions will be taken to minimize the danger of drift of herbicide onto nontarget plants. For the protection of the large-flowered skullcap, no soil active herbicides will be used at any time within 50 feet of a skullcap management group. In addition, herbicide use during this plant's March-September growing season will be limited to stem treatments (basal bark, stem-injection, or cut stump) within 50 feet of the management groups. Foliar applications within the 50 foot buffer area will only be made during the fall and winter and thus only on evergreen or semi-evergreen pest plants, to minimize the risk of spray drift affecting a protected plant.

The extensive creek system of VTS-C will also be protected from herbicide contamination: within 25 feet of water, only stem treatments will be used, and foliar treatments will be avoided in any situation where spray would be carried toward water. To minimize the risk of erosion issues from elimination of IPP near streams, dead vegetation will be left standing on creek banks wherever possible, and there will be no stump removal on creek banks or within the 50 foot streamside management zone (SMZ).

Large-flowered skullcap experimentation

VTS-C has a large population of the federally listed threatened plant large-flowered skullcap. In cooperation with the USFWS, the TNARNG hopes to initiate several research projects described in Annex 1 of the INRMP.

To test the potential for transplanting threatened skullcap groups, a number of individuals will be transplanted from locations scheduled for development on the training site to similar locations within that region of the training site. To minimize the loss of plants from the training site, individuals will be propagated in the nursery and outplanted to the training site to replace those plants lost to construction and development. The transplanted individuals will not represent a loss of plants if survival is poor.

To investigate the impact of fire on large-flowered skullcap, several small management groups will not be protected from the prescribed burns scheduled in accordance with Annex 3 of the INRMP. Cool, dormant season burns will be allowed to burn through the chosen skullcap areas on either a 7-year or 4-year rotation, and response of the skullcap will be monitored.

Skullcap management groups which are threatened by invasive pest plants will be subject to experimental control of the IPP with herbicide treatments. The skullcap will be monitored for detrimental effects from herbicide treatments on a small portion of the management group. If the focused treatments are

successful in controlling IPP and there are no damaging effects on the protected species, herbicide treatments will be expanded to include the entire management group as needed.

3.0 ALTERNATIVES CONSIDERED

3.1 ALTERNATIVES DEVELOPMENT

Alternatives were considered based on budget constraints, regulatory requirements, and the functionality of the action. A partial implementation alternative was examined but was discarded as incompatible with DoD and Sikes Act guidance: the INRMP is an integrated document incorporating a specified selection of topics which interact to ensure effective ecosystem management of the site. Elimination of any of those topics would result in a document that does not meet regulatory requirements and a program which is incomplete and ineffective. Therefore, only two alternatives are considered in this NEPA analysis: the Proposed Action and the No Action Alternative.

3.2 NO ACTION ALTERNATIVE

In accordance with regulations promulgated by the Council on Environmental Quality, 43 CFR, Part 1500, Section 1502.14(d), a “No-Action” Alternative must be considered despite the fact that such an alternative would not currently comply with the *Sikes Act* or Army Regulation 200-1.

Under the No-Action Alternative, the VTS-C Revised INRMP would not be implemented, and current natural resources management practices would continue in accordance with the 2002-2006 INRMP with no change in management direction or intensity. The VTS-C would continue to operate using existing programs and management practices; however, new programs for endangered species management and forest management would not be implemented, and most of the projects identified in the revised INRMP, Chapter 4, would not be implemented. The installation would not be in compliance with the Sikes Act and associated guidance due to expiration of the original INRMP period without a completed review/revision. Non-compliance with AR 200-1 would occur due to the lack of an Endangered Species Management Component (ESMC) for two federally listed species now known to occur on the training site.

Under the No Action alternative the following natural resource management practices would persist as directed by the original INRMP:

- Implementation of Best Management Practices (BMPs)
- Protection of wetlands and riparian areas
- Use of temporary erosion control methods during heavy troop training periods
- Implementation of erosion control projects, as funding becomes available
- Protection of Federally listed species by avoidance
- Control of non-native invasive plant species and use of native species for revegetation where feasible
- Intermittent use of prescribed fire to maintain training conditions

Management actions that would not be implemented under the No-Action Alternative include:

- The endangered species management plan for large-flowered skullcap and gray bat
- Forest management actions (timber stand improvement, thinning, harvest, etc.)
- Prescribed fire management coordinated with timber management activities for ecosystem management

- An updated invasive pest plant control plan guided by a recent IPP survey and up-to-date control recommendations.
- Additional biological surveys to support or augment those completed in accordance with the original INRMP

4.0 AFFECTED ENVIRONMENT

4.1 LOCATION DESCRIPTION

The Volunteer Training Site – Catoosa is a 1,628 acre Tennessee Army National Guard training site located in east-central Catoosa County in northwestern Georgia, approximately two miles east of Ringgold, the county seat, and 20 miles southeast of Chattanooga, Tennessee (see **Figures 2.1**, p.12, and **2.2**, p.13, of the INRMP main body). The site is approximately 16,000 feet at its maximum length by approximately 6,625 feet at its maximum width. Georgia State Highway 2 borders the site on the south, and Salem Valley Road accesses the northern boundary.

The climate of Catoosa County is characterized by hot summers and cool winters, with precipitation averaging nearly 58” per year, spread relatively evenly through all seasons. The long growing season and plentiful rainfall combine to create a rich vegetative system dominated by broadleaf forest. The topographic relief of the training site contributes to a high diversity of ecotypes and species. Forests cover approximately 82% of the training site. Another 15% is managed grasslands on ranges and training areas. The remainder is the developed land of the cantonment area. Surrounding lands are a patchwork of forested ridges and valleys that have been cleared for pasturage, small-scale farming, and residences.

4.2 LAND USE

VTS-Catoosa supports the TNARNG State and Federal missions. It provides military field training exercises for both armored and artillery units. This facility provides high quality, realistic training areas, and is used to conduct small arms weapons qualification, command post exercises, field training exercises, and other training activities such as classroom work, familiarization or qualification with tank armaments, and simulated maneuvers.

4.2.1 Current VTS-C Land Use

VTS-Catoosa covers approximately 1,628 acres on Federally-owned property licensed to the Tennessee Army National Guard from the Mobile District of the U.S. Army Corps of Engineers. The training site consists of 10 training areas (TAs) and a Cantonment Area (see **Figure 2.3**, p.16, of the INRMP). The 55 acre Cantonment Area is located at the southern end of the training site. It consists of administrative buildings, supply buildings, two mess halls, classrooms, and barracks and latrine facilities to accommodate 400 soldiers. The small arms range area is also considered a part of the cantonment.

The small arms range facilities include:

- 25-meter pistol range
- 25-meter rifle range
- 10-meter M-60 machine gun range
- 1200-meter machine gun transition
- Known Distance rifle range (100-600 yards)

An additional M203 practice grenade launcher range is located just west of the cantonment in TA1. A tank gunnery range (1:60 scale) and tank table VII range (1:2 scale) occupy portions of TA3, TA4, TA5, and TA7 in the central portion of the training site. Additional facilities include a demolition range, gas chamber, and hand grenade qualification course. Army aviation facilities include one lighted, non-controlled helipad. The nearest fuel point is the Chattanooga Metropolitan Airport.

4.2.2 Off-Site Land Use

The property surrounding VTS-C is primarily privately owned rural residential and agricultural land. The helicopter landing pad is approximately 100 feet north of the closest residence. Land to the north of the maneuver area and rifle range and west of VTS-C is composed of cultivated land, cattle pasture, and hardwood forest. Tiger Creek Elementary School is located approximately 0.5 mile west of the training site on Highway 2.

4.3 AIR QUALITY

The ambient air quality in an area can be characterized in terms of whether it complies with the primary and secondary National Ambient Air Quality Standards (NAAQS). The Clean Air Act requires the federal government to set NAAQS for pollutants considered harmful to public health and the environment. NAAQS are provided for seven criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter with an aerodynamic size less than or equal to 10 micrometers (PM-10), particulate matter with an aerodynamic size less than or equal to 2.5 micrometers (PM-2.5), and sulfur dioxide (SO₂). Areas are designated as “attainment”, “nonattainment”, “maintenance”, or “unclassified” with respect to the NAAQS. General air quality monitoring is conducted in areas of high population density and near major sources of air pollutant emissions. Rural areas are typically not considered in such monitoring.

Catoosa County experiences air quality problems because of its proximity to Chattanooga, TN. The EPA has designated the area surrounding Chattanooga, including Catoosa County, as a nonattainment area for specific air quality parameters. The air quality problems relate to elevated ground-level ozone and particulate matter levels. At the time of this assessment, Catoosa County was in nonattainment status for the 8-hour ozone standard and the PM-2.5 standard (US EPA 2007a).

This nonattainment status has led the Georgia EPD to issue an annual ban on open burning between May 1 and September 30, a timeframe corresponding to the traditional smog season (Georgia Rules for Air Quality Control 391-3-1). This open burning ban does not apply to prescribed burning.

4.4 NOISE

Noise refers to sounds generated by on-site activities that could affect members of the TNARNG and the public. The EPA provides information on negative effects of noise, identifying indoor and outdoor noise limits that protect public health and welfare (e.g., hearing damage, sleep disturbance, and communications disruption). Noise levels below 65 decibels are generally considered to be acceptable in suitable living environments. The following information is taken primarily from the Statewide Operational Noise Management Plan completed for the TNARNG in 2006 (USACHPPM 2006).

4.4.1 Noise Environment

Most of the surrounding lands near VTS-C are rural residential properties and small farms. There are no concentrated residential developments within the range of the noise contours described in the 2006

TNARNG Operational Noise Plan. Noise sensitive receiver sites in the area are primarily individual residences and Tiger Creek Elementary School, located 0.5 mile from the training site along Highway 2.

The topography of the region in which VTS-Catoosa is located is significant to noise considerations. The alternating steep, narrow ridges and valleys serve as natural barriers to sound travel.

Overall, there are currently few problems concerning the noise environment at VTS-C. Noise complaints are minimal, and encroachment pressures are negligible.

4.4.2 Noise Sources

The purpose of VTS-C is primarily to provide the TNARNG with a place for basic military training including small arms, maneuver, field bivouac, and tracked and wheeled vehicle operations. Training at the installation occurs year round, but the vast majority takes place in the months from June to October. The noise produced by the training at the installation is generally limited to that which is made from the small arms firing (i.e., weapons smaller than 20mm). However, there are some operations at the demolition range and the M203 range that are considered large arms.

Small Arms – VTS-C currently utilizes the following ranges:

- (1) KD rifle range (100-600 yards)
- (1) 25-m pistol range
- (1) 25-m rifle range
- (1) shotgun range
- (1) .50 caliber / tank range
- (1) hand grenade practice range

According to the Small Arms noise contour determinations in the Operational Noise Plan, the Zone III contour (incompatible with residential land use) is either contained within the installation boundary or it travels off into uninhabited woodland. The Zone II contour travels well off the facility but does not encompass any noise-sensitive areas of relevant density.

Large Explosions and Other Impulsive Sounds – VTS-C has the following large arms/demolition ranges:

- (1) M203 Grenade launcher practice range
- (1) Demolition range

The operations on these ranges are limited, but calculations in the Noise Plan indicate that both the Zone III and the Zone II contours from the M203 range extend beyond the installation boundary a significant degree in the southern portion of the training site. There are currently no high density noise sensitive uses in this area, but in the future additional development along the highway may become a source of noise complaints. The Zone III contour does encompass the Tiger Creek Elementary School.

Noise contours in the northern portion of the training site are dictated by the Demolition range. Both Zone II and Zone III contours extend past the installation boundary, especially along Route 379. There are some residences in this area, and although the density is not high at this time, future development or increased operations may result in noise complaints.

Aircraft – Aircraft operations at the VTS-C are minimal. There is one lighted, non-controlled helipad on site. Total aircraft on-site averages 15-20 in a 12 month period. Most traffic is during the daytime and includes some transportation use as well as training operations.

Transportation and Other Noise – The noise generated by the current amount of wheeled and/or tracked vehicle maneuver training is small and does not travel beyond the installation boundary.

4.4.3 Current Noise Issues

Currently, VTS-C has few issues concerning noise; noise complaints are minimal and, at this time, encroachment pressures are negligible. Operational noise is contained fairly well within the installation boundary, and in those places where the noise does travel beyond the border, the existing land use is of very low density with few residences. Nevertheless, it is a possibility that future residential development around the installation, particularly to the northeast and to the south, could become a source of noise complaints.

4.5 GEOLOGY AND SOILS

4.5.1 Physiography and Topography

The VTS-C lies within the Southern Appalachian Ridge and Valley physiographic province. The area is characterized by a series of ridges and valleys that lie in a southwest to northeast direction (see **Figure 3.2**, p.27, of the INRMP) (Hodler and Schretter 1986). Tiger Creek and Broom Branch lie within the valley portion of the training site, surrounded by several unnamed ridges, as well as Sand Mountain to the northwest. Elevations range from approximately 755 feet above mean sea level (msl) along the creek channels to more than 1,200 feet above msl on Sand Mountain and other ridges. Slopes are generally moderately steep to steep on the ridges and range from nearly level to strongly sloping in the valleys (USGS 1983). Slope is a significant contributor to a high erosion index on over 75% of the training site.

4.5.2 Geologic Structure

Bedrock in the region of VTS-C is primarily Paleozoic sedimentary rock. Compressional forces deformed existing flat sedimentary formations to create folds which then eroded to the ridge and valley structure seen today. In the region east of Sand Mountain, older rocks were thrust over and now overlie younger rocks. The formations underlying the VTS-C area consist mostly of sandstone, siltstone, and shale. Depth to bedrock is typically more than 20 inches. No known mineral or petroleum resources are located on or under VTS-C (Lawrence 1993).

4.5.3 Soils

Thirteen soil series within three major soil associations are found on VTS-C (see **Figure 3.3**, p.29, and **Table 3.1**, p.28, of the INRMP), as described by the 1993 Catoosa County soil survey (Lawrence 1993). The Chenneby-Rome soils on the nearly level ground of floodplains and stream terraces range from poorly drained to well drained and typically are not considered highly erodible. These silt loam soils are deep (>60 inches to bedrock) and prone to seasonal flooding and wetness. The upland soils on the training site fall within either the Townley-Cunningham-Conasauga or Townley-Tidings soil associations. These upland soils are generally well-drained and often moderately to strongly sloping and are highly erodible. They are loam or silt-loam soils 20-40 inches deep over shale bedrock.

Soil erosion potential is a significant limiting factor on the VTS-C (see **Figure 3.4**, p.32, of the INRMP). Over 75% of the soil types at VTS-C meet the criteria for highly erodible land. Slope steepness and length is the key factor in erosivity: ridge soils are much more prone to erosion than the lowland soils. Wetness and flooding are commonly limiting factors in the valleys on the training site.

4.6 WATER RESOURCES

The VTS-C lies within the Chickamauga watershed. The training site is drained by three named blue line streams (see **Figure 3.5**, p.34, of the INRMP): Tiger Creek and its tributaries Broom Branch and Catoosa Springs Branch. There are also nine unnamed tributaries to Tiger Creek that are shown as blue line streams. In total there are approximately 11.6 miles of intermittent or flowing stream on the site (Minkin et al. 1998).

A water quality survey conducted at VTS-C in 1998 reported the water quality in the surveyed creeks and ponds as “generally very good” (SAIC 1998a). However, the State of Georgia has developed a Total Maximum Daily Load (TMDL) Implementation Plan for the Tiger Creek watershed. Tiger Creek’s designated use is fishing, and the creek is listed as impaired on Georgia’s 303(d) list for fecal coliform bacteria. The TMDL Implementation Plan lists the primary source of the bacteria as non-point from wildlife, agricultural livestock, and urban development (Joss 2006).

Tiger Creek and its tributaries are designated as Secondary Trout Streams by GADNR. A Secondary Trout Stream is one that has no evidence of natural trout reproduction but that is capable of supporting trout throughout the year (Joss 2006). This designation results in additional controls intended to minimize sedimentation and maintain forest cover for temperature control. Current state regulation requires the maintenance of a 50 foot vegetated buffer on either side of a trout stream with permits required for any modification within that buffer area.

A 1998 delineation of wetlands and other regulated waters was performed by Minkin et al. (1998). They found that VTS-C contained approximately 7.88 acres of wetlands and ponds, the majority located in the southwestern corner of the property (see **Figure 3.5**, p. 34, of the INRMP). This small area (0.5% of the installation’s total land area) constitutes a variety of wetland communities, with many situated along streams and drainages. Six National Wetland Inventory (NWI) classes were found at VTS-C. The majority of the wetlands on VTS-C (4.55 acres) are emergent systems dominated by grasses. In addition, there are approximately 2.36 acres of forested wetlands dominated by hardwood species and 0.97 acre of shrub dominated wetland

One small pond exists on the site; it is a man-made pond behind a small dam from 1934 and is heavily clogged with silt and organic debris.

4.7 BIOLOGICAL RESOURCES

4.7.1 Vegetation

Vegetation Communities

The VTS-C is part of a larger ecosystem that is known as the Gulf Slope Section of the Oak-Pine Forest Region (Braun 1950). The modern landscape supports islands of somewhat natural areas (with one or more communities present) within a sea of anthropogenic features such as roads, buildings, and farms. Ten natural communities were described in the Phase II natural resources survey by Science Applications International Corporations based on edaphic conditions and dominant species types (SAIC 1998b). These community types were further refined into 11 floristic alliances according to the National Vegetation Classification Standard (see **Figure 3.6**, p.38, of the INRMP) (Dynamic Solutions 2007). During this most recent vegetation survey 171 plant species were identified on the training site (see Appendix F of the INRMP). The forests on the training site are second growth, mostly under 60 years old, regenerated after past logging or clearing for agriculture. The grasslands are human-created and maintained.

Mixed oak and oak-hickory forests predominate, occupying approximately 82% of the training site. Species composition of the overstory varies and is dependent on slope, slope aspect, and soil moisture regimes. White oak (*Q. alba*), black oak (*Q. velutina*), chestnut oak (*Q. montana*), and eastern red cedar (*Juniperus virginiana*) dominate the diverse overstory on the xeric to mesic sites along upper and mid slopes, while on lower slopes, oaks share dominance with yellow poplar (*Liriodendron tulipifera*). The much wetter bottomland hardwoods are dominated by green ash (*Fraxinus pennsylvanica*) with other species that tolerate some inundation and higher soil moisture throughout the year. The training site also contains natural stands of loblolly and shortleaf pines (*Pinus taeda* and *P. echinata*) as well as pine plantations dominated by loblolly pine.

While open fields at VTS-C are dominated by broomsedge (*Andropogon virginicus*) and crabgrass (*Digitaria sanguinalis*), the composition is somewhat dynamic and also contains shrubby and herbaceous species such as plantain (*Plantago* spp.), blackberry (*Rubus allegheniensis*), thoroughwort (*Eupatorium* spp.), and honeysuckle (*Lonicera* spp.). These areas are periodically bushhogged throughout the growing season to maintain them in an open condition for training. A mixture of crabgrass, Bermudagrass (*Cynodon dactylon*), white clover (*Trifolium repens*) and other lawn grasses and weeds occupy the lawns of the installation's cantonment area. These areas are mowed frequently throughout the growing season and are generally well-maintained.

Forest Inventory and Management

A forest inventory and a management plan for VTS-Catoosa were completed in 2006. The forest inventory determined that a total of 1,313 acres of VTS-C were covered in forests in April 2005. The forest stands are typically dominated by red oaks and white oaks, with a substantial amount of pine in some stands. Yellow-poplar is a co-dominant in some stands, as is hickory. The average DBH for the entire installation was calculated as 11.7 inches, and the average basal area was 78.1 square feet per acre. Most stands are 20-40 years old; although some had trees approaching 70 years in age, and a few stands were dominated by young trees. The overall health of the forest stands was classified as good in April 2005, but there was evidence of a past infestation of southern pine beetles. In addition, stands in the impact area of the tank range show a significant amount of timber damage due to frequent hot fires (Thompson Engineering et al. 2006).

4.7.2 Wildlife

A total of 218 animal species, representing four groups of land vertebrates (17 amphibians, 134 birds, 23 mammals, and 8 reptiles) and 36 fish species have been documented at VTS-Catoosa during numerous natural resources surveys (SAIC 1998a; SAIC 1998b; URS and EcoTech 2007; AMEC unpublished). The federally listed endangered gray bat (*Myotis grisescens*) has been captured over Tiger Creek on VTS-C, but no hibernacula have been identified on the training site. Further information on the gray bat is presented in section 4.7.3.

Although the installation does not allow hunting at this time, numerous game species have been identified at VTS-C including white-tailed deer (*Odocoileus virginianus*), eastern cottontail (*Sylvilagus floridanus*), northern bobwhite quail (*Colinus virginianus*), raccoon (*Procyon lotor*), grey squirrel (*Sciurus carolinensis*), mink (*Marmota monax*), and wild turkey (*Meleagris gallopavo*).

Feral pigs (*Sus* sp.) have been a problem on the training site in the past and may require removal through contracted hunting and trapping. They threaten ground nesting birds and disturb large areas of soil with rooting and wallowing. They may be a particular threat to the large-flowered skullcap as they will dig up and eat the perennial root-stock of this threatened plant. Beaver (*Castor canadensis*) are another problem wildlife species on the VTS-C. They have built extensive dams in Tiger Creek and Broom Branch, and the resultant flooding kills timber and makes land unusable for training. A trapping program initiated in

2006 has the population under control at this time, but they will require on-going surveillance and management.

4.7.3 Rare, Threatened, or Endangered Species

One federally listed plant species has been located on VTS-C: a rather large population of the threatened large-flowered skullcap (*Scutellaria montana*) occurs in clusters over most of the training site (see **Figure 3.8**, p.48, of the INRMP). Occurrences of large-flowered skullcap undergo annual monitoring, and areas in which they are located are marked off-limits to all training activities during the growing season for the plant and are off-limits to vehicular traffic year-round.

The federally listed endangered gray bat (*Myotis grisescens*) was captured while foraging over Tiger Creek on the VTS-C during a bat survey conducted in 2006-2007 (URS and EcoTech 2007). No hibernacula were identified on the training site during this survey, but further research is needed to fully characterize the gray bat presence on the training site.

In addition to the large-flowered skullcap and the gray bat, a number of federal and state-listed species have been documented within Catoosa County (Table 4-1). None of the other species have been found on the VTS-C to date. The blueside darter (*Etheostoma jessiae*), redline darter (*E. rufilineatum*), and banded darter (*E. zonale*) are Georgia “special concern species.” These fish were found at VTS-C during an aquatic resources survey in 1998 (SAIC 1998a). No further investigation has been made of their use of the training site.

4.8 CULTURAL RESOURCES

No cultural resources located at the VTS-C are currently listed on the National Register of Historic Places (NRHP). There are, however, resources that have been identified as eligible. A Phase I cultural resources survey of the VTS-C was conducted in 1997 (Stanyard et al. 1998). Twenty archaeological sites and one isolated find were identified on the training site. Nine prehistoric sites and three historic sites are recommended eligible for the NRHP under Criterion D. The other sites are recommended ineligible.

In addition, 17 historic architectural resources were identified. Most were recommended ineligible due to loss of integrity. Three were recommended eligible for the NRHP: a 1934 concrete dam (with associated pond), a ca. 1907 target range, and a ca. 1940 concrete bridge. The State Historic Preservation Office (SHPO) concurred with these findings on 15 August 1998.

Twenty federally recognized American Indian tribes have a current or historic interest in TNARNG lands. All interactions between the TNARNG and these tribes are conducted in accordance with the DoD Annotated American Indian and Alaska Native Policy (27 Oct 1999).

Protection of these historic and prehistoric sites is directed by the TNARNG Integrated Cultural Resources Management Plan (ICRMP) for VTS-Catoosa. This document also guides interactions and consultation with the American Indian tribes that have a current or historic interest in TNARNG lands.

Table 4-1. Threatened and endangered plant and animal species found in Catoosa County, Georgia. (Data obtained from Georgia Wildlife Resources Division 2012a, 2012b; Natureserve 2012; US Fish and Wildlife Service 2012.)

Organism Type	Scientific Name	Common Name	Habitat	Federal Status ⁽¹⁾	State Status ⁽²⁾
Documented at VTS-C					
Plant	<i>Scutellaria montana</i>	Large-flowered skullcap	Mature oak forests on dry, rocky slopes	LT	T
Mammal	<i>Myotis grisescens</i>	Gray bat	Cave roosts, riparian foraging areas	LE	E
Not documented at VTS-C					
Plant	<i>Hydrastis canadensis</i>	Goldenseal	Mesic hardwood forests with alkaline soils	None	E
Plant	<i>Leavenworthia exigua</i> var. <i>exigua</i>	Tennessee gladececess	Limestone cedar glades	None	T
Plant	<i>Spiranthes magnicamporum</i>	Great Plains ladies' tresses	Prairies and glades with alkaline soils	None	E
Plant	<i>Thaspium pinnatifidum</i>	Glade meadowparsnip	Forests with calcareous soils	None	E
Plant	<i>Xyris tennesseensis</i>	Tennessee yellow-eyed grass	Seepy margins of limestone spring runs	LE	E
Crustacean	<i>Cambarus extraneus</i>	Chickamauga crayfish	Shallows of high gradient streams	None	T
Amphibian	<i>Cryptobranchus alleganiensis</i>	Eastern hellbender	Cool, clear streams with large rocks	None	T
Fish	<i>Erimonax monachus</i>	Spotfin chub	Large creeks to medium rivers; moderate to swift current over gravel to bedrock	LT	T
Fish	<i>Etheostoma duryi</i>	Black darter	Springs & small-medium, clear, gravel bottom streams	None	R
Fish	<i>Hemitremia flammea</i>	Flame chub	Springs & spring-fed streams with aquatic vegetation	None	E
Fish	<i>Ichthyomyzon bdellium</i>	Ohio lamprey	Adults: medium to large rivers; larvae: mud bottoms of quiet pools in creeks	None	R
Fish	<i>Notropis ariommus</i>	Popeye shiner	Large creeks to medium rivers with gravelly substrate	None	E
Fish	<i>Noturus eleutherus</i>	Mountain madtom	Small to large rivers with fast-flowing waters and sandy or rocky substrate	None	E
Fish	<i>Percina sciera</i>	Dusky darter	Low gradient creeks and small rivers with gravel substrate and plentiful vegetation	None	R
Fish	<i>Percina tanasi</i>	Snail darter	Shoals of creeks and small rivers with sandy substrate	LT	E
Fish	<i>Phenacobius uranops</i>	Stargazing minnow	Creeks to medium rivers in rocky runs and riffles	None	T
Insect	<i>Gomphus consanguis</i>	Cherokee clubtail	Mountain streams and adjacent terrestrial areas	None	T
¹ Federal status codes: LE (Listed Endangered) - Taxon is threatened by extinction throughout all or a significant portion of its range LT (Listed Threatened) - Any species or subspecies of wildlife that is likely to become endangered within the foreseeable future ² State status codes: E (Endangered) - Any species or subspecies of wildlife whose prospects of survival or recruitment within the state are in jeopardy or are likely to become so in the foreseeable future T (Threatened) - species likely to become endangered in the immediately foreseeable future as a result of rapid habitat destruction or commercial exploitation R (Rare) – species not endangered or threatened, but which should be protected because of its scarcity					

4.9 SOCIOECONOMICS

Socioeconomics identifies and describes the basic attributes and resources associated with the human environment surrounding the VTS-C. This data is presented in order to provide an understanding of the socioeconomic forces that have shaped, and continue to shape, the area. Data have been collected from the U.S. Census Bureau (2007) and the U.S.D.A. Economic Research Service (2007).

Table 4-2: Regional income data for Catoosa County, Georgia.

	Total Resident Population, 2011 *	Median Household Income, 2006-10 *	% Persons Below the Poverty Line, 2006-10 *	Unemployment Rate (%), 2010 **
Catoosa County	64,530	\$46,544	11.2 %	8.1 %
Georgia	9,815,210	\$49,347	15.7 %	10.2 %
U.S.	311,591,917	\$51,914	13.8 %	9.6 %

* U.S. Census Bureau (2012)

** U.S.D.A. Economic Research Service (2012)

Socioeconomic areas of discussion for the affected environment precluded from this discussion due to overall inapplicability include local housing, schools, medical facilities, service facilities, recreational facilities, and associated issues of health and safety. Implementation of the subject INRMP would not affect any of these areas outside the boundaries of the VTS-C.

4.10 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN

Because children may suffer disproportionately from environmental health risks and safety risks, Executive Order (EO) 13045, Protection of Children from Environmental Health Risks and Safety Risks, was introduced on April 21, 1997. EO 13045 was intended to prioritize the identification and assessment of these risks that may affect children and to ensure that Federal agency policies, programs, activities, and standards address these risks. Currently, there are seldom children present at the VTS-C as visitors, no children reside at the installation, and no child care centers, schools, parks, or other concentrations of children exist on the installation. However, there is a potential for children to be present in areas proximal to the training site, as Tiger Creek Elementary School is located approximately 0.5 mile west of the main gate on Highway 2.

EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, dated 11 February 1994, was issued to focus attention of federal agencies on human health and environmental conditions in minority and low-income communities, and to ensure that potential disproportionately high and adverse human health or environmental effects on these communities are identified and addressed. Catoosa County, as shown in Table 4-2, has a very low percentage of minorities and has a higher median income than the state average. The area immediately surrounding the training site has a range of income levels, but no concentration of low income citizens.

Table 4-3: 2011 Regional population by race for Catoosa County, Georgia. Data from US Census Bureau (2012).

Area	All Individuals	White (%)	African-American (%)	American Indian & Alaska Native (%)	Asian or Pacific Islander (%)	Two or More Races (%)	Hispanic or Latino ⁺ (%)
Catoosa County	64,530	93.8	2.8	0.4	1.4	1.5	2.5
Georgia	9,815,210	63.2	31.0	0.5	3.5	1.8	9.1
U.S.	311,591,917	78.1	13.1	1.2	5.2	2.3	16.7

⁺ Persons of Hispanic or Latino origin may be of any race.

4.11 INFRASTRUCTURE

Infrastructure resources include potable water supply, wastewater treatment, solid waste disposal, energy sources, and transportation systems (i.e., roads, railways, airports).

The VTS-C is accessible via Georgia State Highway 2 on the south (the main gate) and Salem Valley Road on the north. Interstate 75 is located approximately 2 miles southwest of the installation. Approximately 30 miles of roads, predominantly maintained gravel, are within the training site. One lighted, non-controlled helipad serves the minimal aircraft operations on the site. The nearest fuel point is the Chattanooga Metropolitan Airport. There are no rail facilities on or near the VTS-C.

Electricity is supplied to the training site by Georgia Power. Telecommunications services are provided by Ringgold Telephone Service. The water supply is through the Catoosa County Utility District. There is one well located on the training site; it is not used as a potable water source but supplies the vehicle wash rack. Wastewater discharge on the VTS-C is to thirteen septic tanks across the facility. The washrack discharges to grade.

4.12 HAZARDOUS AND TOXIC MATERIALS/WASTES

The VTS-C does not currently generate hazardous waste. A solvent rag laundry service is used by the training site. Any excess, expired, or unknown products are disposed of in accordance with the TNARNG Hazardous Waste Management Plan. Waste disposal would be coordinated through the Facilities Engineers Office, the United States Purchasing Fiscal Office (USPFO), and the Chattanooga FMS should any waste be generated at the VTS-C.

Based on the record search conducted in September 1994, no underground storage tanks are present in the VTS-C area. There are four active aboveground storage tanks on the training site. These tanks are located in the motor pool area. The 3,000-gallon JP8 tank is double-walled steel, pad-mounted, and has secondary containment. The three 1,000-gallon capacity tanks are used to store diesel and unleaded gasoline and are single-walled and situated on a concrete pad. All of the military vehicles used at this training site operate using diesel fuel. The Training Site has a current, active Spill Prevention Control and Countermeasures (SPCC) Plan that specifically includes actions to be taken in the event of a diesel or fuel spill.

Most pesticide use on site is done by contract with licensed pest control operators. The training site currently has one certified pesticide applicator on staff who makes weed control applications. Minimal amounts of herbicides are maintained on site for weed control and are stored and handled in accordance

with the Federal Insecticide, Fungicides, and Rodenticide Act (FIFRA), state and DoD regulations, and the product label.

5.0 ENVIRONMENTAL CONSEQUENCES

This section identifies the potential positive and negative environmental, cultural, and socioeconomic effects, or impacts, of the identified alternatives on each of the technical issue areas presented in Section 4.0. In addition, this section identifies any mitigation measures that may be associated with each resource area that when implemented, would reduce the level of identified impacts.

Impacts are characterized as direct or indirect. A direct impact is caused by a proposed action and occurs at the same time and place, while an indirect impact is caused by a proposed action but occurs later in time or farther removed in distance but is still reasonably foreseeable.

In addition to indicating whether impacts are direct or indirect, the impact analyses included in this section distinguish between short- and long-term impacts. In this context, short- and long-term do not refer to any rigid time period but are determined on a case by case basis in terms of the environmentally significant consequences of the proposed action.

Generally, implementation of an updated and improved plan for integrated natural resources management is expected to result in a significant, positive, long-term environmental impact to the natural, cultural, and socioeconomic environments at the VTS-C by allowing for use of a holistic management approach.

5.1 LAND USE

5.1.1 Effects of the Proposed Action

The implementation and integration of the proposed Revised INRMP into the VTS-C overall approach to environmental and training site management would directly supplement and facilitate land management and use for nearly all installation activities. It would allow for the successful completion of military operations while providing for the conservation of natural resources.

The proposed VTS-C INRMP includes strategies that, when implemented, would ensure long-term sustainability of the natural resources on which the TNARNG depends for training. Implementation of land management practices, as described in the INRMP, would improve the quality of existing lands and enhance land use potential. The management goals, objectives, and projects contained within the INRMP would allow for continuance and even improvements of the military training mission, foster increased cooperation with regulatory agencies, and would improve habitat and water quality throughout the site via implementation of BMPs and other measures outlined in the INRMP. Therefore, this action would have *major, long-term positive impacts* to VTS-C land use and management.

5.1.2 Effects of the No Action Alternative

Under the No Action alternative, current management policies and activities would continue with no further guidance from an up-to-date INRMP. Land management would be carried out as it was in the past; however, such efforts might not be conducted in the most appropriate or effective manner. Failure in these efforts could result in degradation of the natural resources of VTS-C over time and a decline in the ability of the land to support military training. As such, the No Action alternative could result in *long-term negative impacts* to VTS-C land use.

5.2 AIR QUALITY

5.2.1 Effects of the Proposed Action

The only action in the natural resources management program that could impact air quality is prescribed burning. Prescribed burning has been identified in the INRMP as a management practice for the improvement of training conditions, control of wildfire, and for experimentation in the regeneration of hardwood forest stands. The major effects of smoke on air quality are visibility reduction and respiratory impairment near the fire due to particulates. Smoke can impair general air quality in populated areas downwind from extensive burning.

Catoosa County is in a nonattainment area for air quality. Open burning restrictions do not apply to prescribed burning of forests and grasslands; however, care should be taken to minimize the influence of VTS-C burning on regional air quality. All prescribed burning would be conducted in accordance with the TNARNG prescribed burn plan and would utilize the smoke management guidelines contained therein. Appropriate smoke management and careful timing of burns to avoid the worst nonattainment periods will mitigate impacts by reducing smoke emissions, ensuring burning occurs during atmospheric conditions that favor smoke dispersion, and minimizing emissions during high-pollution seasons.

Prescribed burning in accordance with the VTS-C INRMP may have short-term, minor effects on air, but mitigation should ensure there are *no significant impacts* on air quality.

5.2.2 Effects of the No Action Alternative

Prescribed burning has been taking place for the maintenance of training area conditions under the minimal guidance of the 2001 INRMP. Burns are conducted with the assistance of the Georgia Division of Forestry. Under the No Action alternative, this practice will continue and there will be *no changes* in the impacts on air quality.

5.3 NOISE

5.3.1 Effects of the Proposed Action

No noticeable effects to area noise environments would be expected from implementation of the Proposed Action. The primary concern regarding noise impacts relates to increases in sound levels that exceed acceptable land use compatibility guidelines and public tolerance. The principle sources of problem noise on the VTS-C are military training activities. As the Proposed Action does not change these military activities, it would have little impact on noise levels on the training site.

Certain actions (e.g., timber harvest) would result in temporary increases in noise levels, but those increases would be well below the typical existing noise levels from military training. Therefore, implementing the Proposed Action should have *no significant impact* on the noise environment.

5.3.2 Effects of the No Action Alternative

Under the No Action Alternative there would be *no effects* to the noise environment. Noise from military activities would remain at present levels.

5.4 GEOLOGY AND SOILS

5.4.1 Effects of the Proposed Action

Implementation of the Proposed Action will have no effects on the geology of the area, as no major changes or management programs regarding geological resources are proposed.

As a part of the natural resources management proposed, the TNARNG would take a proactive approach to prevent soil erosion and to repair existing erosion in an appropriate and timely manner. Actions which would benefit soil resources on the training site include cultivating a thorough understanding of and the appropriate use of BMPs for all soil-disturbing activities; implementing regular surveys and the development of a reporting and planning system for identifying erosion problems and their appropriate restoration; enforcing streamside management zones for protection of riparian areas; and stabilizing creek banks, especially along Tiger Creek, to minimize undercutting, soil loss, and sedimentation.

Certain actions proposed within the INRMP have the potential to cause detrimental effects on training site soils (e.g., timber harvest skid trails, development of fire breaks, and increased runoff due to vegetation thinning through timber harvest or invasive pest plant control). However, the adverse effects of such actions would be mitigated by the appropriate use of BMPs as detailed in the INRMP.

Overall, the implementation of the proposed action would have a *long-term beneficial impact* on the soils of the training site, as implementing an effective soil conservation and erosion control program would reduce soil loss through the erosion process.

5.4.2 Effects of the No Action Alternative

Continuation of current management under the No Action alternative would have no effects on the geology of the site.

Under the No Action alternative, soil protection and rehabilitation measures to minimize soil erosion would still occur. Soil damage during training missions could be expected to continue at its present level, and soil damaged areas created during training missions would continue to be repaired as needed. However, current management strategies include reacting to erosion problems after they occur, rather than preemptively managing the soil resources to prevent impacts or minimize the extent of unavoidable impacts. Without the guidance and training provided for in the revised INRMP, erosion control and repair actions would follow old guidelines and utilize traditional methods which may not be the most appropriate for all circumstances. This would result in continuing soil loss through the erosion process and *minor, long-term negative impacts* to soils from the No Action alternative.

5.5 WATER RESOURCES

5.5.1 Effects of the Proposed Action

There could be some minor, temporary negative impacts to water resources from implementation of the Proposed Action: logging activities, streambank restoration, and beaver dam removal may release some sediment at time of action, although they will be managed with BMPs. In particular, removal of beaver dams should be done incrementally to minimize the sediment load increase and allow a more gradual return of open flow regimes.

However, the overall effects on water resources and water quality would be positive. The enforcement and protection of streamside management zones will intercept sediment, fertilizer, pest control chemical residue, and other pollutants transported overland toward the creek system. Maintenance of the forest cover within these streamside management zones will also preserve a natural temperature regime in the surface waters. Stabilization of creek banks, especially along Tiger Creek, will eliminate sediment loads from bank undercutting and slumping. The variety of erosion control actions, discussed above, will lessen the danger of sedimentation.

Implementation of the proposed action should have a *long-term, beneficial impact* on water resources.

5.5.2 Effects of the No Action Alternative

Under the No Action Alternative, wetlands and riparian areas would continue to be protected by the current standards of avoidance. This prevents significant damage to soils or water quality from current training activities, but does nothing to repair past damages or problems from non-training related causes. There would be no actions taken to repair the banks of Tiger Creek, a regular source of sediment. Under the guidance of the original INRMP, streamside management zones are little noted and training and other activities may occur too close to the streams' banks. While there would be no timber management actions, standard training and land management activities under the old guidance would potentially contribute significant sediment and other pollutants to the creeks over the long-term.

Implementation of the No action alternative would have a *long-term detrimental impact* on water resources.

5.6 BIOLOGICAL RESOURCES

5.6.1 Effects of the Proposed Action

Overall, implementation of the Proposed Action would result in a wide variety of actions that will improve the health and stability of the natural ecosystems on VTS-C. Biological resources including vegetation, wildlife, and rare, threatened, and endangered species would benefit from these activities.

Vegetation

The forest management portion of the proposed plan would result in a short-term decrease in forest biomass but an improvement in overall forest health. The biomass would be replaced readily as residual trees expanded into the newly created space. Control of invasive pest plants would also lead to an improvement in ecosystem health and a probable increase in biodiversity. Control of wild pig populations generally has a strong positive impact on herbaceous biodiversity.

Wildlife

The positive impacts of the Proposed Action on wildlife species are numerous. Examples include habitat improvement through the removal of non-native plant species, maintenance of habitat corridors along creeks within the SMZs, increased mast production typically following forest thinning, protection of ground nesting species via control of wild pig populations, and protection and improvement of aquatic habitat quality through maintenance of SMZs and creek bank stabilization efforts.

There could be some short term detrimental impacts resulting from certain actions proposed within the INRMP. There may be loss of individual animals to fire during prescribed burns. To minimize this threat, burns should not be conducted during breeding season for ground-nesting species and unburned patches of similar habitat should be left contiguous to burned areas to provide "escape zones" and short-term replacement habitat. There could be loss of habitat or habitat fragmentation resulting from timber

harvests. However, since the harvested areas will be less than 60 acres and distributed around the training site, existing habitat will be retained in close proximity to all harvests and the impact on wildlife will be minimal.

Beaver and wild pig will experience a negative impact through population control efforts. However, both species are considered pests in the region, and their loss is not considered detrimental to the environment as a whole.

Rare, Threatened, or Endangered Species

The federally listed large-flowered skullcap and gray bat will experience significant positive effects from the Proposed Action. Their habitats will be protected, and their populations will be monitored and further studied. Monitoring and study results may benefit not only those individuals present on VTS-C but the species across their entire ranges.

Overall, implementation of the Proposed Action would have *significant, long-term positive effects* on the biological resources of VTS-C.

5.6.2 Effects of the No Action Alternative

Under the No Action Alternative, existing processes would continue for managing biological resources. There would be no timber harvests; existing stands would age and lose value. In addition, in the absence of openings created by thinning, prescribed fire, or natural phenomenon, there is a strong tendency for eastern mixed oak forests to experience a change in species composition to more shade tolerant species such as red maple. This change has substantial impacts on the wildlife of the forest, as maple does not provide the food source that the oaks and hickories provide.

Prescribed fire use under the No Action Alternative would continue to be directed solely by training needs and may not be effective in controlling fuel loads. This may make the forests of the training site more subject to a serious wildfire which could cause substantial damage to vegetation, wildlife, and man-made structures and equipment.

Under the No Action Alternative, the original INRMP will be followed. This document has no plan for the management of threatened and endangered species. Regulatory requirements would be met by avoidance of the listed species and their habitats. However, there would be no projects to improve habitat for protected species or to further study their susceptibility to certain disturbances. In addition, there would be only patchy control of IPP and pest animals, and there would be no aquatic habitat improvement.

Overall, the No Action Alternative would have *long-term negative effects* on the biological resources of the VTS-C.

5.7 CULTURAL RESOURCES

5.7.1 Effects of the Proposed Action

Cultural resources would not be affected by the implementation of the Proposed Action. The VTS-C has been surveyed for historical and cultural resources. Identified cultural sites will be avoided by activities related to the implementation of the revised INRMP. Inadvertent discoveries would be handled in accordance with the TNARNG ICRMP for VTS-Catoosa.

There is concern over earth disturbance during timber harvest affecting unknown sites. However, all of the VTS-C has been subjected to a Phase I archaeological survey. Those few areas which are suspected of containing significant cultural resources will not be subject to timber management activities.

There should be *no significant impacts* on cultural resources as a result of the implementation of the Proposed Action.

5.7.2 Effects of the No Action Alternative

All cultural resources will continue to be protected. There will be *no effects* from the No Action Alternative.

5.8 SOCIOECONOMICS

5.8.1 Effects of the Proposed Action

Implementation of the Proposed Action should have minimal influence on the socioeconomic environment. Trends in population, housing, and income in the region would be expected to continue in their current patterns. There will, however, be a *minor positive effect* from timber sales proposed in the INRMP: 50% of the net proceeds of all DoD timber sales are returned to the county in which the site is located to support local schools and road funds.

5.8.2 Effects of the No Action Alternative

The No Action Alternative should have *no effect* on socioeconomics.

5.9 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN

5.9.1 Effects of the Proposed Action

Implementation of the Proposed Action should not cause disproportionately high or adverse health effects that would impact minority or low-income populations in the communities surrounding the VTS-C. The Proposed Action should have *no effect* on environmental justice.

5.9.2 Effects of the No Action Alternative

Implementation of the No Action Alternative should have *no effect* on environmental justice.

5.10 INFRASTRUCTURE

5.10.1 Effects of the Proposed Action

Logging and other land management activities proposed in the revised INRMP will result in small occasional, temporary increases in road use. This will be extremely minor relative to the typical military usage. There will be *no significant impacts* on infrastructure from implementation of the Proposed Action.

5.10.2 Effects of the No Action Alternative

Under the No Action Alternative, there will be no change to current land management. There should be *no effect* on infrastructure of the VTS-C.

5.11 HAZARDOUS AND TOXIC MATERIALS/WASTES

5.11.1 Effects of the Proposed Action

Implementation of the Proposed Action would result in *no significant effects* on hazardous and toxic materials/wastes. There may be a small increase in the use of herbicides on the site when the IPP control plan is implemented. These herbicides will be stored, handled, and disposed of in accordance with Federal and State law and the product label. No other hazardous or toxic materials will be involved in the implementation of the revised INRMP.

5.11.2 Effects of the No Action Alternative

The No Action Alternative will result in no changes to current pesticide handling and so there will be *no impact* on hazardous and toxic materials/wastes.

5.12 MITIGATION MEASURES

Mitigation typically involves elimination, minimization, or compensation for impacts if unavoidable. Implementation of an INRMP to manage the natural resources of the VTS-C is a positive action that has few adverse effects. The INRMP itself provides the guidance necessary to conduct a variety of activities with the minimum of impact; implementing the actions as they are prescribed in the INRMP will include all necessary mitigation measures. Below, these measures are reiterated for those actions which have some potential for detrimental impact.

Follow appropriate protocols and precautions for smoke management during prescribed burns to minimize impacts to air quality. Do not burn during the summer when pollutant levels from nearby Chattanooga are at their highest.

Use appropriate BMPs to minimize soil loss due to timber harvest, prescribed fire/fire break construction and maintenance, and other ground-disturbing activities. Schedule timber harvests, and any other ground-disturbing activity, when feasible, to avoid wet soils in order to minimize erosion and compaction effects from equipment access and moving logs.

Use appropriate BMPs to minimize stream sedimentation due to timber harvest, prescribed fire/fire break construction and maintenance, stream bank restoration, beaver dam removal, or other ground disturbing activities. Remove beaver dams incrementally to minimize increases in sediment load at any given time.

Provide wildlife “escape zones” of unburned or unharvested habitat contiguous to prescribed fire areas or timber harvests.

Avoid archaeological sites with all actions and follow ICRMP standard operating procedures in case of any inadvertent find.

5.13 CUMULATIVE EFFECTS

Cumulative impacts are those which “result from the incremental impact of the proposed actions when added to other past, present, and reasonably foreseeable future actions, without regard to the agency (federal or non-federal) or individual who undertakes such other actions” (40 CFR 1508.7).

5.13.1 Effects of the Proposed Action

Implementation of the Proposed Action would provide *long-term positive cumulative effects*. Protection and management of natural resources within the training site would counter the habitat fragmentation and loss to be expected as a region currently on the outskirts of a metropolitan area is engulfed by sprawl. Appropriate ecosystem management in accordance with the INRMP will provide a “safe haven” for wildlife and rare species.

The restoration and rehabilitation efforts proposed in the Plan would repair the residual effects of past military training and earlier land use. The guidance provided in the INRMP will help to mitigate potential effects of future military training activities and training facility development.

Management under the INRMP would dovetail well with other regional environmental management plans such as the Tier 2 TMDL Implementation Plan for improving water quality in Tiger Creek in Catoosa and Whitfield Counties; the State of Georgia Comprehensive Wildlife Conservation Strategy; trout stream improvement efforts by GADNR and conservation partners North Georgia Trout Online and Georgia Trout Unlimited; and large-flowered skullcap protection by the US Fish and Wildlife Service, the Tennessee Valley Authority, and several non-governmental organizations including the North Chickamauga Creek Conservancy and The Nature Conservancy to protect and improve regional environmental conditions.

5.13.2 Effects of the No Action Alternative

Under the No Action Alternative, the original 2002 INRMP would continue to guide natural resources management on the VTS-C. This alternative would have *no significant cumulative effects*. The guidance provided in the old INRMP would minimize negative impacts from future training activities and facility development, and the natural environment of the training site would be protected from commercial development. However, there would be no new management actions to contribute to regional environmental improvement efforts.

6.0 COMPARISON OF ALTERNATIVES AND CONCLUSIONS

6.1 COMPARISON OF THE ENVIRONMENTAL CONSEQUENCES OF THE ALTERNATIVES

Resource Area	Proposed Action	No Action
Land Use	Long-term positive	Long-term negative
Air Quality	Temporary, minor, negative	No effect
Noise	No effect	No effect
Geology and Soils	Long-term positive	Minor, long-term negative
Water Resources	Long-term positive	Long-term negative
Biological Resources	Long-term positive	Long-term negative
Cultural Resources	No effect	No effect
Socioeconomics	Minor positive	No effect
Environmental Justice	No effect	No effect
Infrastructure	No effect	No effect
Hazardous and Toxic Materials	No effect	No effect

6.2 CONCLUSIONS

Based on this analysis, the Proposed Action of implementing the revised INRMP for VTS-C is identified as the preferred alternative that would provide the greatest benefit to both the environment and the TNARNG training mission. Implementation of this preferred alternative is the most effective method to comply with the Sikes Act, Army Regulation 200-1, and DoD Instruction 4715.3. It also best enables the TNARNG to meet mission and training requirements at the VTS-C while enhancing the environment through integrated natural resources management.

Implementation of the Proposed Action would result in a comprehensive natural resources management strategy for the VTS-C. Implementation could result in some minor, temporary negative impacts; however, the overall effects would be of long-term benefit to the physical, cultural, and natural environment of the VTS-C. The projects and guidance from the revised INRMP, if implemented, would improve the overall training integration with natural resources management and would minimize potential negative environmental impacts from other TNARNG activities at VTS-C.

Upon completion of public review, a determination will be made about whether to prepare an EIS. If agency and/or public review does not reveal any significant impacts, a Final Environmental Assessment and a Finding of No Significant Impact will be prepared. Any public or agency comment received during the review period will be incorporated into the final document in an appropriate manner. If an EIS is required, this document would become the basis for scoping.

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8.0 LIST OF PREPARERS

This EA has been prepared by the staff of the TNARNG Environmental Office. The individuals who contributed to the preparation of this document include:

Laura P. Lecher
Natural Resources Manager

Nancy S. Allen
EMS/Water Quality Program Manager

Janie J. Becker
Biologist

Greg C. Finney
Environmental Specialist (ECAP)

CPT Mike Martin
Pest Management Coordinator

William McWhorter
Environmental Specialist

Mike Stokes
Cultural Resources Specialist

Kenneth Wainscott
Office Manager

9.0 AGENCIES AND INDIVIDUALS CONSULTED

The agencies listed below were contacted during the development of the proposed INRMP and EA:

U.S. Fish and Wildlife Service
Athens Field Office
James Rickard, Biologist

Georgia Department of Natural Resources
Wildlife Resources Division
Nongame Conservation Section
Tom Patrick, Biologist

10.0 AGENCY REVIEW

In addition to extensive communication with the agencies listed in Section 9.0 during the development of the revised INRMP, the following agencies and organizations were notified directly of the availability of

the revised INRMP and EA for the initial public review and the FNSI review. Copies of the form letters sent out for this purpose can be found in Agency Correspondence, Appendix C of the INRMP. There were no comments received.

Organization	POC	Address
US Army Corps of Engineers, Mobile District		PO Box 2288 Mobile, AL 36628-0001
US Army Corps of Engineers, Savannah District		PO Box 889 Savannah, Georgia 31402
US Environmental Protection Agency, Region 4		Sam Nunn Atlanta Federal Center 61 Forsyth Street, SW Atlanta, Georgia 30303
US Fish and Wildlife Service, Athens Field Office	James Rickard, Biologist	West Park Center 105 West Park Drive, Suite D Athens, Georgia 30606
US Forest Service, Southern Region		1720 Peachtree Road, NW Atlanta, Georgia 30309
Natural Resources Conservation Service	James E. Tillman, State Conservationist	355 East Hancock Ave. Stop Number 200 Athens, Georgia 30601
Georgia Department of Natural Resources, Environmental Protection Division		2 Martin Luther King Jr. Drive Suite 1152, East Tower Atlanta, Georgia 30334
Georgia Department of Natural Resources, Historic Preservation Division	Ray Luce, SHPO	34 Peachtree Street, NW Suite 1600 Atlanta, Georgia 30303
Georgia Department of Natural Resources, Wildlife Resources Division	Trina Morris, Wildlife Biologist	2117 US Highway 278 SE Social Circle, Georgia 30025
Georgia Forestry Commission		3086 Martha Berry Highway NE Rome, Georgia 30165
Absentee Shawnee Tribe of Oklahoma	Scott Miller, Governor	2025 S. Gordon Cooper Shawnee, OK 74801
Alabama-Coushatta Tribe of Texas	Ronnie Thomas, Chairman	571 State Park Road 56 Livingston, Texas 77351
Alabama-Quassarte Tribal Town	Tarpie Yargee, Chief	PO Box 187 Wetumka, Oklahoma 74883
Cherokee Nation	Chad Smith, Principal Chief	PO Box 948 Tahlequah, Oklahoma 74465
Chickasaw Nation	Bill Anoatubby, Governor	PO Box 1548 Ada, Oklahoma 74820
Choctaw Nation of Oklahoma	Gregory E. Pyle, Chief	PO Drawer 1210 Durant, Oklahoma 74702
Coushatta Tribe of Louisiana	Kevin Sickey, Chairman	PO Box 818 Elton, Louisiana 70532
Eastern Band of Cherokee Indians	Michelle Hicks, Principal Chief	PO Box 455 Cherokee, North Carolina 28719
Eastern Shawnee Tribe of	Glenna J. Wallace, Chief	PO Box 350

Organization	POC	Address
Oklahoma		Seneca, Missouri 64865
Jena Band of Choctaw	Christine Norris, Chief	PO Box 14 Jena, Louisiana 71342
Kialegee Tribal Town	Evelyn Bucktrot, Mekko	PO Box 332 Wetumka, Oklahoma 74883
Mississippi Band of Choctaw Indians	Phillip Martin, Chief	PO Box 6010, Choctaw Branch Choctaw, Mississippi 39350
Muscogee (Creek) Nation	A.D. Ellis, Principal Chief	PO Box 580 Okmulgee, Oklahoma 74447
Poarch Band of Creek Indians	Buford Rolon, Chairman	5811 Jack Springs Road Atmore, Alabama 36502
Quapaw Tribe of Oklahoma	John Berrey, Chairman	PO Box 765 Quapaw, Oklahoma 74363
Seminole Nation of Oklahoma	Kelly Haney, Chief	PO Box 1498 Wewoka, Oklahoma 74884
Seminole Tribe of Florida	Mitchell Cypress, Chairman	6300 Stirling Road Hollywood, Florida 33024
Thophthlocco Tribal Town	Vernon Yarholar, Mekko	PO Box 188 Okemah, OK 74859
Tunica-Biloxi Tribe of Louisiana	Earl Barbry, Sr., Chairman	PO Box 1589 Marksville, LA 71351
United Keetoowah Band of Cherokee Indians in Oklahoma	George Wickliffe, Chief	PO Box 746 Tahlequah, OK 74465

11.0 PUBLIC REVIEW

This Environmental Assessment was submitted for a public review period from 29 January 2010 to 2 March 2010 with notification in the Catoosa County News. Although the document was present at the library in early December 2009, complications with the publication of the notice resulted in a delay of the review period to February. No public comments were received.

The Environmental Assessment and Finding of No Significant Impact were submitted for a public review period from 27 April to 27 May 2012 with notification in the Catoosa County News. The document was available at the Catoosa County Library as well as on the Tennessee Military Department's webpage. No public comments were received.

APPENDIX B

Finding of No Significant Impact (FNSI) Revised Integrated Natural Resources Management Plan (INRMP) and Environmental Assessment (EA) for Volunteer Training Site – Catoosa in Catoosa County, Georgia

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DRAFT FINDING OF NO SIGNIFICANT IMPACT (FNSI)
FOR IMPLEMENTATION OF
THE REVISED INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN AT
VOLUNTEER TRAINING SITE - CATOOSA

Introduction

The Tennessee Army National Guard (TNARNG) has prepared an Environmental Assessment (EA) that evaluates and analyzes the potential environmental effects of implementing the revised Integrated Natural Resources Management Plan (INRMP) for the Volunteer Training Site – Catoosa (VTS-C) in Catoosa County, Georgia. The revised INRMP is the result of a review for operation and effect of the original VTS-C INRMP conducted jointly by the TNARNG, the US Fish and Wildlife Service, and the Georgia Division of Natural Resources. The EA was prepared in accordance with the National Environmental Policy Act (NEPA) (42 USC § 4321 to 4370e), the Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (CEQ Regulations, 40 CFR Parts 1500-1508), and *Environmental Analysis of Army Actions* (32 CFR 651).

1. Description of Proposed Action and Alternatives

Proposed Action.

The TNARNG proposes to implement the revised INRMP. The purpose of the Proposed Action is to ensure no general loss in the capability of the VTS-C to support the military training mission of the TNARNG by providing for long-term management of the site's natural resources. Implementation of the INRMP will provide for the conservation, rehabilitation, and sustainable use of natural resources on the installation, in accordance with the Sikes Act (as amended) and Army Regulations (AR) 200-1.

The Revised INRMP differs significantly from the initial INRMP (implemented in 2001) by including a detailed forest management program, a wildland fire management plan, and a rare species management plan to ensure the protection of two federally listed species found on the VTS-C, the large-flowered skullcap and the gray bat. The Proposed Action will enable mission accomplishment while maintaining compliance with applicable laws and regulation.

Alternatives Considered.

Under the No Action Alternative, the 2001 INRMP would continue to provide guidance for natural resources management on VTS-C. However, there would be no provision for timber management and harvest activities, and guidance on wildland fire control would be minimal. Protection of the endangered species would be piecemeal, and the lack of coordinated management and mitigation for these species could lead to limitations on the military training mission.

The overall goal is to provide for effective natural resources management on the VTS-C. The revised INRMP is an integrated document designed to meet regulatory requirements and provide an effective management program. Any partial implementation option would be ineffectual and other alternatives would not be beneficial to the VTS-C. Therefore, no other Alternative Actions were considered.

2. Environmental Analysis

The EA assesses potential effects on land use, air quality, noise, water resources, geology and soils, biological resources, cultural resources, hazardous materials and hazardous wastes, and socioeconomics (including environmental justice and protection of children). Based upon the analysis contained in the EA, TNARNG has determined that implementation of the revised INRMP would not have an impact on noise, cultural resources, environmental justice, infrastructure, or hazardous materials and wastes. The implementation of the revised INRMP could have a minor, temporary adverse impact on air quality through the increased use of prescribed burning for fuel control and vegetation management. The Proposed Action would have a minor positive effect on socioeconomics and long-term beneficial effects on land use, geology and soils, water resources, and biological resources at VTS-C.

Based upon the analysis contained in the EA, it has been determined that the known and potential impacts of the Proposed Action on the physical, cultural, and natural environment will be of a positive nature. Implementation of the TNARNG's revised INRMP for the VTS-C will result in the effective management of natural resources at the training site. No mitigation measures will be required for implementation of the INRMP at VTS-C.

Mitigation. No mitigation measures will be necessary to reduce any adverse environmental effects to below significant levels.

3. Regulations

The Proposed Action will not violate NEPA, the CEQ Regulations, 32 CFR 651, or any other Federal, State, or local environmental regulations.

4. Commitment to Implementation

The National Guard Bureau (NGB) and TNARNG affirm their commitment to implement this EA in accordance with NEPA. Implementation of the Proposed Action is dependent on funding. The TNARNG and the NGB's Environmental Programs, Training, and Installations Divisions will ensure that adequate funds are requested in future years' budgets to achieve the goals and objectives set forth in this EA.

5. Public Review and Comment

The draft INRMP and EA were made available for public review and comment from 29 January 2010 to 2 March 2010. No comments were received.

The final INRMP and EA and the draft FNSI will be available for public review and comment for 30 days. Copies may be reviewed at the Catoosa County Library, Ringgold, Georgia, or on-line at <http://www.tnmilitary.org/Environmental.html>. Copies may also be obtained by mail, and written comments may be submitted to:

Laura Lecher
Tennessee Army National Guard
JFHQ-TN-ENV
3041 Sidco Drive
Nashville, Tennessee 37204

For further information, please contact Ms. Lecher at 731-222-5321 or Laura.Lecher@tn.gov .

6. Draft Finding of No Significant Impact (FNSI)

After careful review of the EA, I have concluded that implementation of the Proposed Action would not generate significant controversy or have a significant impact on the quality of the human or natural environment. Per 32 CFR Part 651, the Revised INRMP, Final EA and draft FNSI will be made available for a 15-day public review and comment period. Once any public comments have been addressed and if a determination is made that the proposed action will have no significant impacts, the FNSI will be signed and the Proposed Action will be implemented. This analysis fulfills the requirements of NEPA and the CEQ Regulations. An Environmental Impact Statement will not be prepared, and the National Guard Bureau will issue this Finding of No Significant Impact.

Date

COL MICHAEL C. AHN
Chief, Environmental Programs Division
National Guard Bureau

APPENDIX C

Agency Correspondence

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APPENDIX D

Public Comment

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First Public Review Period:

The Revised Integrated Natural Resources Management Plan for the Volunteer Training Site – Catoosa of the Tennessee Army National Guard and its associated Environmental Assessment were made available via electronic access and a bound copy at the Catoosa County Public Library from 14 December 2009 until 2 March 2010. Interested agencies and American Indian Tribes were notified of the availability of the document via letter (see Appendix C, Agency Correspondence) or e-mail.

One comment was received from the representative of an American Indian Tribe; the comment and TNARNG's response are given below. The official public review period, as announced in the Catoosa County News, ran from 29 January 2010 to 2 March 2010. No public comments were received.

NOTIFICATION:

----- Original Message -----

From: "Stokes, Mike CIV CTR" <william.m.stokes@us.army.mil>
 To: <kkaniatobe@astribe.com>; <Actribe.doc@actribe.org>;
 <aqttcultural@yahoo.com>; <rallen@cherokee.org>; <gingy.nail@chickasaw.net>;
 <tcole@choctawnation.com>; <lovelin@coushattatribela.org>;
 <lthompson@coushattatribela.org>; <russtown@nc-cherokee.com>;
 <estochief@hotmail.com>; <radushane@gmail.com>; <chief@jenachoctaw.org>;
 <Evelyn_bucktrot@yahoo.com>; <kialegeetribal@yahoo.com>;
 <kcarleton@choctaw.org>; <preservation@muscogeenation-nsn.gov>;
 <cultural@ocevnet.org>; <rothrower@hotmail.com>; <dheghia@earthlink.net>;
 <Executive1@seminolenation.com>; <lupchurch@seminolenation.com>;
 <wsteele@samtribe.com>; <chascoleman@prodigy.net>; <pfoster@tunica.org>;
 <earlii@tunica.org>; <clocust@unitedkeetowahband.org>; <lstopp@ukb.org>
 Cc: "Laura Lecher" <Laura.Lecher@tn.gov>; <michelle.volkema@dnr.state.ga.us>
 Sent: Tuesday, December 22, 2009 11:13 AM
 Subject: TN Army National Guard - INFORMAL Section 106 Consultation

Dear Honored Tribes ~

The TNARNG has completed the Final Draft of the Integrated Natural Resources Management Plan (INRMP) for the Volunteer Training Site-Catoosa (VTS-C) in Catoosa County, Georgia. This is a full revision of the original INRMP, dated 2001, for this training site, with additional significant information on endangered species management, forest management activities, wild land fire management, and invasive species control.

In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended in 1980 and 1992, the TNARNG requests your review of the Final Draft of the 2010-2014 INRMP. This document is available for review through January 24, 2010 on our new document review link at www.tnmilitary.org.

Go to www.tnmilitary.org

Click on the Green Environmental link at left side of screen

Click on the Natural Resources link to view the INRMP

If you have questions or feedback concerning the INRMP document, please contact Ms. Laura Lecher, Natural Resources Manager at 731-783-3975 or Laura.Lecher@tn.gov.

Please contact me should you have any questions and concerns with our new format.

Best wishes for a holiday season filled with good health, happiness, and the love of family & friends.

Sincerely,

Mike Stokes, CTR, BWM, Inc.
Cultural Resources Manager
TN Army National Guard (TNARNG)
3041 Sidco Drive, POB 41502
Nashville TN 37204-1502
615-313-0794 (office)
615-313-0766 (fax)

COMMENT:

From: "charles coleman" <chascoleman@prodigy.net>
To: "Stokes, Mike CIV CTR" <william.m.stokes@us.army.mil>, <kkaniatobe@astri...>
Date: 12/28/2009 9:14 AM
Subject: Re: TN Army National Guard - INFORMAL Section 106 Consultation

CC: "Laura Lecher" <Laura.Lecher@tn.gov>, <michelle.volkema@dnr.state.ga.us>
Seasons Greetings to All!

Well since I was snowed in I had time to review the Executive Summary and scan the other 300 plus pages.

I am OK with the format.

Thlopthlocco does not need a list of plants but some tribes have requested a list in the past.

I would like a copy of other tribes coments.

Charles Coleman
Thlopthlocco Tribal Town

TNARNG RESPONSE:

From: Laura Lecher
Integrated Natural Resources Management Plan
VTS-Catoosa

To: charles coleman
Date: 1/5/2010 9:06 AM
Subject: Re: TN Army National Guard - INFORMAL Section 106 Consultation

CC: Mike CIV CTR Stokes
Mr. Coleman,

Sorry for my slow response. The list of plants found on site is in Appendix F of the draft document. All public comments will become a part of the final document which will be available electronically (download or cd). I'll be happy to compile all tribe comments and send them out after the review period, as well, if you would like.

Thank you for your comments, and please let me know if you have any further suggestions or concerns.

Hope the snow wasn't too deep,
Laura

Laura P. Lecher
Natural Resources Manager, TNARNG
731-783-3975 / fax 731-783-3901
laura.lecher@tn.gov

Final Public Review and FNSI Review:

The final version of the Integrated Natural Resources Management Plan for the Volunteer Training Site – Catoosa of the Tennessee Army National Guard and its associated Environmental Assessment and Finding of No Significant Impact were made available for the final public review period (FNSI review) from 27 April 2012 until 27 May 2012. Notice was published in the Catoosa County News. The document was accessible via the TNARNG public webpage and a bound copy was located at the Catoosa County Public Library.

Interested agencies and American Indian Tribes were also notified of the availability of the final document via letter (see Appendix C, Agency Correspondence) or e-mail.

No public comments were received.

APPENDIX E

Annotated Summary of Key Legislation Related to Natural Resources Management

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United States Code

<i>Sikes Act, as amended; 16 U.S.C. 670(a) et seq.</i>	Authorizes military installations to carry out programs for the conservation and rehabilitation of natural resources. Requires preparation and implementation of Integrated Natural Resources Management Plans for all military installations in U.S. except those lacking significant natural resources.
<i>National Environmental Policy Act of 1969 (NEPA), as amended; P.L.91-190, 42 U.S.C. 4321 et seq.</i>	Requires Federal agencies to utilize a systematic approach when assessing environmental impacts of government activities. NEPA proposes an interdisciplinary approach in a decision-making process designed to identify unacceptable or unnecessary impacts to the environment.
<i>Leases: Non-excess Property of Military Departments, 10 U.S.C. 2667, as amended</i>	Authorizes DoD to lease to commercial enterprises Federal land that is not currently needed for Public use. Covers agricultural outleasing programs.
<i>Federal Land Use Policy and Management Act, 43 U.S.C. 1701-1782</i>	Requires management of public lands to protect the quality of scientific, scenic, historical, ecological, environmental, and archaeological resources and values; as well as to preserve and protect certain lands in their natural condition for fish and wildlife habitat. This act also requires consideration of commodity production such as timbering.
<i>Clean Air Act, 42 U.S.C. 7401-7671q, July 14, 1955, as amended</i>	This Act, as amended, is known as the Clean Air Act of 1990. The amendments made in 1990 established the core of the clean air program. The primary objective is to establish Federal standards for air pollutants. It is designed to improve air quality in areas of the country which do not meet Federal standards and to prevent significant deterioration in areas where air quality exceeds those standards.
<i>Federal Water Pollution Control Act (Clean Water Act), 33 U.S.C. 1251-1387</i>	The Clean Water Act is a comprehensive statute aimed at restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. Primary authority for the implementation and enforcement rests with the U.S. Environmental Protection Agency (USEPA).
<i>Migratory Bird Treaty Act 16 U.S.C. 703-712</i>	The Migratory Bird Treaty Act implements various treaties and for the protection of migratory birds. Under the Act, taking, killing, or possessing migratory birds is unlawful.
<i>Endangered Species Act of 1973, as amended; P.L. 93-205, 16 U.S.C.1531 et seq.</i>	Protects threatened, endangered, and candidate species of fish, wildlife, and plants and their designated critical habitats. Under this law, no Federal action is allowed to jeopardize the continued existence of an endangered or threatened species. The Endangered Species Act also requires consultation with the USFWS and the National Marine Fisheries Service and the preparation of a biological assessment when such species are present in an area that is affected by government activities.
<i>National Historic Preservation Act; 16 U.S.C. 470 et seq.</i>	Requires Federal agencies to take account of the effect of any federally assisted undertaking or licensing on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register of Historic Places (NRHP). Provides for the nomination, identification (through listing on the National Register), and protection of historical and cultural properties of significance.
<i>Federal Noxious Weed Act of 1974; 7 U.S.C. 2801-2814</i>	The Act provides for the control and management of non-indigenous weeds that injure or have the potential to injure the interests of agriculture and commerce, wildlife resources, or the public health.
<i>Sale of certain interests in land; logs; 10 U.S.C. 2665</i>	Authorizes sale of forest products and reimbursement of the costs of management of forest resources.

<i>Federal Insecticide, Fungicide, and Rodenticide Act, as amended (FIFRA);</i>	Controls pesticide distribution, sale, and use. Requires licensing/certification for commercial applications and for sales of pesticides.
<i>Archaeological and Historical Preservation Act of 1974; 16 U.S.C. 469 et seq.</i>	Provides for the preservation of historical and archaeological data which might otherwise be lost or destroyed as a result of alteration of the terrain caused by any Federal construction project or federally licensed activity or program.
<i>Archaeological Resources Protection Act of 1979; (16 U.S.C. 470 et seq.) 32 CFR 22 and 229</i>	Protects archeological resources and sites on public lands and Indian lands.

Federal Public Laws and Executive Orders

<i>National Defense Authorization Act of 1989, Public Law (P.L.) 101-189; Volunteer Partnership Cost-Share Program</i>	Amends two acts and establishes volunteer and partnership programs for natural and cultural resources management on DoD lands.
<i>Defense Appropriations Act of 1991, P.L. 101-511; Legacy Resource Management Program</i>	Establishes a program for the stewardship of biological, geophysical, cultural, and historic resources on DoD lands.
<i>Executive Order (EO) 11988, Floodplain Management</i>	Provides direction regarding actions of Federal agencies in floodplains, and requires permits from state and Federal review agencies for any construction within a 100-year floodplain.
<i>EO 11514, Protection and Enhancement of Environmental Quality</i>	Federal agencies shall initiate measures needed to direct their policies, plans, and programs to meet national environmental goals. They shall monitor, evaluate, and control agency activities to protect and enhance the quality of the environment.
<i>EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds</i>	Requires any federal agency taking actions that have or are likely to have a measurable negative effect on migratory bird populations to develop and implement an MOU with the USFWS to promote conservation of migratory bird populations.
<i>EO 11593, Protection and Enhancement of the Cultural Environment</i>	All Federal agencies are required to locate, identify, and record all cultural and natural resources. Cultural resources include sites of archaeological, historical, or architectural significance. Natural resources include the presence of endangered species, critical habitat, and areas of special biological significance.
<i>EO 11990, Protection of Wetlands</i>	Each Agency 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.
<i>EO 11987, Exotic Organisms</i>	Agencies shall restrict the introduction of exotic species into the natural ecosystems on lands and waters that they administer.
<i>EO 12088, Federal Compliance With Pollution Control Standards.</i>	This EO delegates responsibility to the head of each executive agency for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution. This order gives the Environmental Protection Agency authority to conduct reviews and inspections to monitor Federal facility compliance with pollution control standards.
<i>EO 12898, Environmental Justice</i>	This EO requires certain Federal agencies, including the DoD, to the greatest extent practicable permitted by law, to make environmental justice part of their missions by identifying and addressing disproportionately high and adverse health or environmental effects on minority and low-income populations.

<i>EO 13112, Exotic and Invasive Species</i>	This EO strives 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.
<i>EO 13045, Protection of Children from Environmental Health and Safety Risks</i>	This EO makes it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children. It also directs agencies to ensure that policies, programs, activities, and standards address such risks if identified.
<i>EO 13007, Indian Sacred Sites</i>	Directs protection of Indian sacred sites Federal lands and guarantees access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners.
<i>EO 13175, Consultation and Coordination with Indian Tribal Governments</i>	Establishes requirement of and process for Nation-to-Nation consultation with Indian tribal governments with regards to the development of Federal policies that have tribal implications.

DoD Policy, Directives and Instructions

<i>DoD Directive 4700.4, Natural Resources Management Program</i>	Requires that the ARNG implement and maintain a balanced and integrated program for the management of natural resources.
<i>DoD Directive 4715.1, Environmental Security</i>	Establishes policy for protecting, preserving, and (when required) restoring and enhancing the quality of the environment. This directive also ensures that environmental factors are integrated into DoD decision-making processes that may impact the environment, and are given appropriate consideration along with other relevant factors.
<i>DoD Annotated Policy on Indian Tribes and Alaska Natives</i>	Establishes DoD American Indian and Alaska Native Policy for interacting and working with federally recognized American Indian and Alaska Native governments (hereinafter referred to as “tribes”). It defines: protected tribal resources, tribal rights, and Indian lands.
<i>DoDI 4715.3, Environmental Conservation Program</i>	Implements policy, assigns responsibility, and prescribes procedures under <i>DoD Directive 4715.1</i> for the integrated management of natural and cultural resources on property under DoD control.

Army Instructions and Directives

<i>AR 200-1, Environmental Protection and Enhancement</i>	As of 28 August 2007, this document supersedes all previous iterations of AR 200-1, AR 200-3, AR 200-4, and AR 200-5. Provides policies, standards and procedures for the following resource areas: NEPA, Natural Resources Management, Cultural Resources Management, Natural Resource Damage Assessment (NRDA), Real Property Acquisition, Outgrant and Disposal Transactions, Environmental Agreements, Environmental Compliance Assessments, Environmental Quality Control Committee (EQCC), Army Environmental Training Program, Installation/State Environmental Training Plans, ITAM, and Pest Management Program
<i>AR 350-19, The Army Sustainable Range Program (superseded AR 210-21)</i>	Assigns responsibilities and provides policy and guidance for managing and operating U.S. Army ranges and training lands to support their long-term viability and utility to meet the National defense mission.
<i>AR 350-4, Integrated Training Area Management (ITAM)</i>	Sets forth the objectives, responsibilities and policies for the ITAM program. ITAM establishes procedures to achieve optimum, sustainable use of training lands by implementing a uniform land management program and includes inventorying and monitoring land condition,

	integrating training requirements with land carrying capacity, educating land users to minimize adverse impacts, and providing for training land rehabilitation and maintenance.
HQDA INRMP Policy Memorandum (21 March 1997), <i>Army Goals and Implementing Guidance for Natural Resources Planning Level Surveys (PLS) and Integrated Natural Resources Management Plan (INRMP)</i>	Provides guidance to ensure that natural resource conservation measures and Army activities on mission land are integrated and are consistent with Federal stewardship requirements.

Official Code of Georgia Annotated

<i>Georgia Water Quality Control Act; OCGA 12-5-20 et seq.</i>	Charges the Environmental Protection Division of the Department of Natural Resources with responsibility for maintaining and regulating the quality and quantity of water resources within the state of Georgia.
<i>Georgia Water Use Classifications and Water Quality Standards; Chap. 391-3-6-.03</i>	Establishes water quality standards for the state of Georgia for all water use classifications.
<i>Georgia Safe Drinking Water Act of 1977; OCGA 12-5-170 et seq.</i>	Charges the Environmental Protection Division with establishing and maintaining a program to ensure adequate water of the highest quality for water-supply systems.
<i>Comprehensive State-Wide Water Management Planning Act; OCGA 12-5-520 et seq.</i>	Charges the Environmental Protection Division with development and implementation of a plan to manage water resources in a sustainable manner to support the state's economy, protect public health and natural systems, and to enhance the quality of life for all citizens.
<i>Georgia Erosion and Sedimentation Act of 1975 (amended 2003); OCGA 12-7-1 et seq.</i>	Sets policy for control of erosion and sedimentation and creates program for permitting of land-disturbing activities and penalties for violations.
<i>Georgia Pesticide Control Act of 1976; OCGA 2-7-50 et seq.</i>	Controls pesticide labeling, distribution, storage, transportation, and disposal of pesticides in the state of Georgia.
<i>Georgia Hazardous Waste Management Act; OCGA 12-8-60 et seq.</i>	Develops a comprehensive state-wide program for the management of hazardous wastes through the regulation of the generation, transportation, storage, treatment, and disposal of hazardous wastes.
<i>Georgia Air Quality Act; OCGA 12-9-1 et seq.</i>	Sets policy for control of air pollution and creates program for permitting, inspecting, and enforcing air quality regulations.
<i>Rules of the Georgia Department of Natural Resources, Wildlife Resources Division 391-4-1 et seq.</i>	Establishes rules and regulations for hunting, fishing, and protection of wildlife, both game and rare/unusual.
<i>Conservation of Historic Areas; OCGA 12-3-50 et seq.</i>	Charges the Department of Natural Resources, Office of the State Archaeologist, with protecting and promoting prehistoric and historic resources of the state.

APPENDIX F

Animal and Plant Species found on VTS-Catoosa

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<i>PHYLLOSTACHYS AUREA</i>	Bamboo	G
<i>SCHEDONORUS PHOENIX</i>	Tall fescue	G
<i>Scirpus cyperinus</i>	Woolgrass	G
<i>Scirpus validus</i>	Soft-stem bulrush	G
<i>SETARIA PUMILA ssp.PUMILA</i>	Yellow foxtail	G
<i>SETARIA VIRIDIS</i>	Green foxtail	G
<i>SORGHUM HALEPENSE</i>	Johnson grass	G
<i>Achillea millefolium</i>	Yarrow	H
<i>Actaea pachypoda</i>	Baneberry	H
<i>Allium canadense</i>	Wild onion	H
<i>ALLIUM VINEALE</i>	Wild garlic	H
<i>Ambrosia artemisiifolia</i>	Annual ragweed	H
<i>Ambrosia trifida</i>	Great ragweed	H
<i>Angelica triquinata</i>	Filmy angelica	H
<i>Antennaria plantaginifolia</i>	Woman's tobacco	H
<i>Antennaria solitaria</i>	Singlehead pussytoes	H
<i>Antennaria sp.</i>	Pussytoes	H
<i>Aplectrum hyemale</i>	Puttyroot orchid	H
<i>Apocynum cannabinum</i>	Indianhemp	H
<i>Arisaema dracontium</i>	Green dragon	H
<i>Arisaema triphyllum</i>	Jack-in-the-pulpit	H
<i>Aristolochia serpentaria</i>	Virginia snakeroot	H
<i>Arnoglossum reniforme</i>	Great Indian plantain	H
<i>Asarum canadense</i>	Canadian wildginger	H
<i>Asclepias amplexicaulis</i>	Clasping milkweed	H
<i>Asclepias tuberosa</i>	Butterfly-weed	H
<i>Asclepias variegata</i>	Redring milkweed	H
<i>Astilbe biternata</i>	Appalachian false goat's beard	H
<i>Aureolaria laevigata</i>	Entireleaf yellow false-foxtail	H
<i>Aureolaria virginica</i>	Downy yellow false-foxtail	H
<i>Baptisia sp. (white-flowered)</i>	Wild-indigo	H
<i>Bidens cernua</i>	Nodding beggartick	H
<i>Boehmeria cylindrica</i>	False nettle	H
<i>Cardamine angustata</i>	Slender toothwort	H
<i>Cardamine concatenata</i>	Cutleaf toothwort	H
<i>Cardamine diphylla</i>	Toothwort; crinkleroot	H
<i>Cardamine dissecta</i>	Forkleaf toothwort	H
<i>Cardamine spp.</i>	Bittercress	H
<i>Chamaecrista fasciculata var. fasciculata</i>	Partridge pea	H
<i>Chamaesyce maculate</i>	Spotted spurge; spotted sandmat	H
<i>Chimaphila maculata</i>	Spotted wintergreen	H
<i>Cicuta maculata</i>	Water hemlock	H

<i>Claytonia virginica</i>	Spring-beauty	H	
<i>Clitoria mariana</i>	Butterfly-pea, Atlantic pigeonwings	H	
<i>Collinsonia verticillata</i>	Stoneroot; whorled horse-balm	H	
<i>Conyza canadensis</i> var. <i>canadensis</i>	Canadian horseweed	H	
<i>Coreopsis major</i>	Greater tickseed	H	
<i>Coreopsis tripteris</i>	Tall tickseed	H	
<i>Crotalaria sagittalis</i>	Arrowhead rattlebox	H	
<i>Cynoglossum virginianum</i>	Wild comfrey	H	
DAUCUS CAROTA	Queen Anne's lace	H	
<i>Desmanthus illinoensis</i>	Illinois bundleflower	H	
<i>Desmodium nudiflorum</i>	Nakedflower ticktrefoil	H	
<i>Desmodium rotundifolium</i>	Prostrate ticktrefoil	H	
<i>Diodia virginiana</i>	Virginia buttonweed	H	
<i>Dodecatheon meadia</i>	Pride of Ohio; shooting star	H	
<i>Elephantopus carolinianus</i>	Carolina elephantsfoot	H	
<i>Enemion biternatum</i>	Eastern false rue anemone	H	
<i>Equisetum hyemale</i>	Scouringrush horsetail	H	
<i>Erigenia bulbosa</i>	Harbinger-of-spring	H	SC
<i>Erigeron annuus</i>	Eastern daisy fleabane	H	
<i>Erigeron philadelphicus</i>	Philadelphia fleabane	H	
<i>Eryngium prostratum</i>	Creeping coyote-thistle; creeping eryngo	H	
<i>Erythronium americanum</i>	Dogtooth violet	H	
<i>Euonymus americanus</i>	Bursting-heart	H	
<i>Eupatorium perfoliatum</i>	Common boneset	H	
<i>Eupatorium purpureum</i>	Joe-pye weed	H	
<i>Eupatorium rotundifolium</i>	Roundleaf thoroughwort	H	
<i>Eupatorium sessilifolium</i>	Upland boneset	H	
<i>Euphorbia corollata</i>	Flowering spurge	H	
<i>Fragaria virginiana</i>	Wild strawberry	H	
<i>Galium aparine</i>	Stickywilly	H	
<i>Galium triflorum</i>	Fragrant bedstraw	H	
<i>Geranium carolinianum</i>	Carolina geranium	H	
<i>Geranium maculatum</i>	Spotted geranium	H	
<i>Gillenia stipulata</i>	American ipecac	H	
GLECHOMA HEDERACEA	Ground-ivy	H	
<i>Goodyera pubescens</i>	Downy rattlesnake plantain	H	
<i>Helenium flexuosum</i>	Purple-headed sneezeweed	H	
<i>Helianthus tuberosus</i>	Jerusalem artichoke	H	
<i>Hepatica nobilis</i> var. <i>acuta</i>	Sharplobe hepatica	H	
<i>Hepatica nobilis</i> var. <i>obtusata</i>	Roundlobe hepatica	H	
<i>Heuchera americana</i>	American alumroot	H	

<i>Hexastylis arifolia</i> var. <i>ruthii</i>	Ruth's Little brown jug	H	
<i>Hieracium gronovii</i>	Hairy hawkweed; queendevil	H	
<i>Houstonia caerulea</i>	azure bluet	H	
<i>Houstonia purpurea</i> var. <i>purpurea</i>	Houstonia; Venus' pride	H	
<i>Hypoxis hirsuta</i>	Yellowstargrass; common goldstar	H	
<i>Impatiens capensis</i>	Jewelweed	H	
<i>Impatiens pallida</i>	Pale touch-me-not	H	
<i>Iris</i> spp.	Wild iris	H	
<i>Iris verna</i>	Dwarf iris	H	
<i>Justicia americana</i>	Waterwillow	H	
<i>Krigia</i> sp.	Dwarfdandelion	H	
<i>LAMIUM AMPLEXICAULE</i>	Henbit	H	
<i>LAMIUM PURPUREUM</i>	Purple dead nettle	H	
<i>LATHYRUS LATIFOLIUS</i>	Perennial pea	H	
<i>Lemna perpusilla</i>	Duckweed	H	
<i>LESPEDEZA BICOLOR</i>	Bicolor lespedeza; shrub lespedeza	H	
<i>LESPEDEZA CUNEATA</i>	Sericea lespedeza	H	
<i>LEUCANTHEMUM VULGARE</i>	Oxeye daisy	H	
<i>Liatris aspera</i>	Tall blazing star	H	
<i>Lobelia cardinalis</i>	Cardinalflower	H	
<i>Lobelia inflata</i>	Indian-tobacco	H	
<i>Ludwigia alternifolia</i>	Bushy seedbox	H	
<i>Lycopodium clavatum</i>	Running clubmoss	H	SC
<i>Lycopodium digitatum</i>	Ground pine; fan clubmoss	H	
<i>LYSIMACHIA NUMMULARIA</i>	Creeping Jennie	H	
<i>LYTHRUM SALICARIA</i>	Purple loosestrife	H	
<i>Maianthemum racemosum</i>	Feathery false lily of the valley	H	
<i>Matelea carolinensis</i>	Maroon Carolina milkvine	H	
<i>Medeola virginiana</i>	Indian cucumber	H	
<i>MENTHA SPICATA</i>	Spearmint	H	
<i>Mertensia virginica</i>	Virginia bluebells	H	SC
<i>Mimosa microphylla</i>	Littleleaf sensitive-briar	H	
<i>Mimulus ringens</i>	Allegheny monkeyflower	H	
<i>Mitchella repens</i>	Partridge-berry	H	
<i>Monarda fistulosa</i>	Wild bergamot	H	
<i>NARCISSUS</i>			
<i>PSEUDONARCISSUS</i>	Daffodil	H	
<i>NASTURTIUM OFFICINALE</i>	Watercress	H	
<i>Nothoscordum bivalve</i>	crowpoison	H	
<i>Nuttallanthus canadensis</i>	Canada toadflax	H	
<i>Oenothera biennis</i>	Common evening-primrose	H	
<i>ORNITHOGALUM</i>			
<i>UMBELLATUM</i>	sleepydick / star-of-bethlehem	H	

<i>Oxalis rosea</i>	sorrel	H	
<i>Oxalis stricta</i>	Common yellow oxalis	H	
<i>Oxalis violacea</i>	Violet woodsorrel	H	
<i>Packera glabella</i>	Butterweed	H	
<i>Packera obovata</i>	Roundleaf ragwort	H	
<i>Packera tomentosa</i>	Woolly ragwort	H	
<i>Panax quinquefolius</i>	American ginseng	H	SC
<i>Pedicularis canadensis</i>	Lousewort; wood betony	H	
PERILLA FRUTESCENS	Beefsteakplant	H	
<i>Phlox amoena</i>	Hairy phlox	H	
<i>Phlox divaricata</i>	Wild blue phlox	H	
<i>Phyla nodiflora</i>	turkey tangle fogfruit	H	
<i>Phytolacca americana</i>	American pokeweed	H	
<i>Pilea pumila</i>	Clearweed	H	
PLANTAGA LANCEOLATA	English plantain	H	
<i>Plantago major</i>	Common plantain	H	
<i>Podophyllum peltatum</i>	Mayapple	H	
<i>Polemonium reptans</i>	Greek valerian	H	SC
<i>Polygonum hydropiperoides</i>	Water-pepper; swamp smartweed	H	
<i>Polygonum pennsylvanicum</i>	Pennsylvania smartweed	H	
<i>Polygonum sagittatum</i>	Arrowleaf tearthumb	H	
<i>Polygonum virginianum</i>	Jumpseed	H	
<i>Potentilla canadensis</i>	Dwarf cinquefoil	H	
<i>Potentilla simplex</i>	Common cinquefoil	H	
<i>Prenanthes sp.</i>	Rattlesnakeroot	H	
<i>Prunella vulgaris</i>	Common selfheal	H	
<i>Pycnanthemum incanum</i>	Hoary mountainmint	H	
<i>Pycnanthemum loomisii</i>	Loomis' mountainmint	H	
<i>Pycnanthemum tenuifolium</i>	Narrowleaf mountainmint	H	
<i>Ranunculus abortivus</i>	Littleleaf buttercup	H	
<i>Ranunculus fascicularis</i>	Early buttercup	H	
<i>Ranunculus recurvatus</i>	Blisterwort	H	
<i>Rhexia mariana</i>	Maryland meadowbeauty	H	
<i>Rudbeckia hirta</i>	Black-eyed Susan	H	
<i>Ruellia carolinensis</i>	Carolina wild petunia	H	
RUMEX CRISPUS	Curly dock	H	
<i>Sagittaria latifolia</i>	Arrowhead	H	
<i>Salvia lyrata</i>	Lyreleaf sage	H	
<i>Salvia urticifolia</i>	Nettleleaf sage	H	
<i>Sanguinaria canadensis</i>	Bloodroot	H	
<i>Sanicula canadensis</i>	Canadian blacksnakeroot	H	
<i>Saururus cernuus</i>	Lizard's tail	H	
<i>Scutellaria elliptica</i>	Hairy skullcap	H	

<i>Scutellaria montana</i>	Large-flowered skullcap	H	LT	T
<i>Scutellaria ovata</i>	Heartleaf skullcap	H		
SHERARDIA ARVENSIS	Blue fieldmadder	H		
<i>Silene virginica</i>	Fire pink	H		
<i>Sisyrinchium mucronatum</i>	Needletip blue-eyed grass	H		
<i>Smallanthus uvedalius</i>	Hairy leafcup	H		
<i>Solanum carolinense</i>	Carolina horsenettle	H		
<i>Solidago gigantea</i>	Giant goldenrod	H		
<i>Sparganium spp.</i>	Bur-reed	H		
<i>Spigelia marilandica</i>	Woodland pinkroot	H		
STELLARIA MEDIA	Common chickweed	H		
<i>Stellaria pubera</i>	Star chickweed	H		
<i>Symphyotrichum cordifolium</i>	Common blue wood aster	H		
<i>Symphyotrichum pilosum var. pilosum</i>	White heath aster	H		
<i>Symphyotrichum praealtum</i>	Willowleaf aster	H		SC
TARAXACUM OFFICINALE	Dandelion	H		
<i>Thalictrum thalictroides</i>	Rue anemone	H		
<i>Tiarella cordifolia</i>	heartleaf foamflower	H		
<i>Tipularia discolor</i>	Crippled crane fly	H		
<i>Tradescantia hirsuticaulis</i>	hairystem spiderwort	H		
<i>Tradescantia subaspera</i>	zigzag spiderwort	H		
<i>Tradescantia virginiana</i>	Virginia spiderwort	H		
TRIFOLIUM REPENS	White clover	H		
<i>Trillium catesbaei</i>	Catesby's wakerobin; bashful wakerobin	H		
<i>Trillium luteum</i>	Yellow trillium; yellow wakerobin	H		
<i>Trillium rugelii</i>	Southern nodding trillium; ill-scented wakerobin	H		
<i>Triodanis perfoliata</i>	Clasping Venus' looking-glass	H		
<i>Typha latifolia</i>	Cattail	H		
<i>Urtica sp.</i>	Stinging nettle	H		
<i>Uvularia perfoliata</i>	Perfoliate bellwort	H		
<i>Uvularia sessilifolia</i>	Sessileleaf bellwort	H		
<i>Valerianella radiata</i>	Beaked cornsalad	H		
VERBASCUM THAPSUS	Woolly mullein	H		
<i>Verbesina alternifolia</i>	Wingstem	H		
<i>Verbesina occidentalis</i>	Yellow crownbeard	H		
<i>Verbesina virginica</i>	White crownbeard	H		
<i>Vernonia sp.</i>	Ironweed	H		
VERONICA PERSICA	Speedwell	H		
<i>Vicia caroliniana</i>	Carolina vetch	H		
VINCA MINOR	Periwinkle	H		
<i>Viola blanda</i>	Sweet white violet	H		

<i>Viola hirsutula</i>	Southern woodland violet	H	
<i>Viola palmata</i>	Early blue violet	H	
<i>Viola pedata</i>	Bird-foot violet	H	
<i>Viola sororia</i>	Common blue violet	H	
<i>Xanthium strumarium</i>	Rough cocklebur	H	
<i>Xyris sp.</i>	Yellow-eyed grass	H	
<i>Alnus serrulata</i>	Smooth alder	S	
<i>Amorpha fruticosa</i>	False indigo-bush	S	
<i>Asimina triloba</i>	Pawpaw	S	
<i>Callicarpa americana</i>	American beautyberry	S	
<i>Calycanthus floridus</i>	Eastern sweetshrub	S	
<i>Ceanothus americanus</i>	New Jersey Tea	S	
<i>Cephalanthus occidentalis</i>	Buttonbush	S	
<i>Cornus amomum</i>	Silky dogwood	S	
<i>Corylus americana</i>	American hazelnut	S	
<i>Cuscuta spp.</i>	Dodder	S	
<i>Dirca palustris</i>	Leatherwood	S	
<i>Gaylussacia baccata</i>	Black huckleberry	S	
<i>Gelsemium sempervirens</i>	Carolina jessamine; evening trumpetflower	S	
<i>Hamamelis virginiana</i>	American witchhazel	S	
<i>Hydrangea arborescens</i>	Wild hydrangea	S	
<i>Hypericum galioides</i>	Bedstraw St. Johnswort	S	
<i>Kalmia latifolia</i>	Mountain laurel	S	
LIGUSTRUM SINENSE	Chinese privet	S	
<i>Lindera benzoin</i>	Spicebush	S	
<i>Phoradendron leucarpum</i>	Oak mistletoe	S	
<i>Physocarpus opulifolius</i>	Ninebark	S	
<i>Rhododendron periclymenoides</i>	Pink azalea	S	
<i>Rhododendron sp.</i>	Azalea	S	
<i>Rhus aromatica</i>	Fragrant sumac	S	
<i>Rhus copallinum</i>	Winged sumac	S	
<i>Rhus glabra</i>	Smooth sumac	S	
<i>Rhus typhina</i>	Staghorn sumac	S	SC
<i>Rosa carolina</i>	Carolina rose	S	
ROSA MULTIFLORA	Multiflora rose	S	
<i>Rubus alleghaniensis</i>	Blackberry	S	
<i>Rubus hispidus</i>	Dewberry	S	
<i>Rubus occidentalis</i>	Black raspberry	S	
RUBUS PHOENICOLASIUS	Wineberry	S	
<i>Salix discolor</i>	Pussy willow	S	
<i>Sambucus nigra ssp. Canadensis</i>	Common elderberry	S	
<i>Staphylea trifolia</i>	Bladderpod	S	

<i>Symphoricarpos orbiculatus</i>	Coralberry	S
<i>Toxicodendron radicans</i>	Poison-ivy	S
<i>Vaccinium arboreum</i>	Farkleberry	S
<i>Vaccinium corymbosum</i>	Highbush blueberry	S
<i>Vaccinium pallidum</i>	Low bush blueberry	S
<i>Vaccinium stamineum</i>	Deerberry	S
<i>Viburnum acerifolium</i>	Maple leaf viburnum	S
<i>Viburnum dentatum</i>	Southern arrowwood	S
<i>Viburnum nudum</i>	Possumhaw	S
<i>Viburnum prunifolium</i>	Blackhaw	S
<i>Viburnum rufidulum</i>	Rusty blackhaw	S
<i>Yucca filamentosa</i>	Adam's needle	S
<i>Acer barbatum</i>	Southern sugar maple	T
<i>Acer negundo</i>	Boxelder	T
<i>Acer rubrum</i>	Red maple	T
<i>Acer saccharinum</i>	Silver maple	T
<i>Aesculus flava</i>	Yellow buckeye	T
<i>AILANTHUS ALTISSIMA</i>	Tree-of-heaven	T
<i>ALBIZIA JULIBRISSIN</i>	Mimosa	T
<i>Amelanchier arborea</i>	Downy serviceberry	T
<i>Aralia spinosa</i>	Devil's- walking stick	T
<i>Betula nigra</i>	River birch	T
<i>Carpinus caroliniana</i>	Ironwood	T
<i>Carya alba</i>	Mockernut hickory	T
<i>Carya cordiformis</i>	Bitternut hickory	T
<i>Carya glabra</i>	Pignut hickory	T
<i>Carya ovalis</i>	Red hickory	T
<i>Carya ovata</i>	Shagbark hickory	T
<i>Carya pallida</i>	Sand hickory	T
<i>Castanea dentata</i>	American chestnut	T
<i>Celtis occidentalis</i>	Northern hackberry	T
<i>Cercis canadensis</i>	Redbud	T
<i>Cornus florida</i>	Dogwood	T
<i>Crataegus sp.</i>	Hawthorne	T
<i>Diospyros virginiana</i>	Persimmon	T
<i>Fagus grandifolia</i>	American beech	T
<i>Frangula caroliniana</i>	Carolina buckthorn	T
<i>Fraxinus americana</i>	White ash	T
<i>Fraxinus pennsylvanica</i>	Green ash	T
<i>Gleditsia triacanthos</i>	Honeylocust	T
<i>Ilex opaca</i>	American holly	T
<i>Juglans nigra</i>	Black walnut	T
<i>Juniperus virginiana</i>	Eastern redcedar	T

<i>Liquidambar styraciflua</i>	Sweetgum	T
<i>Liriodendron tulipifera</i>	Tuliptree; yellow-poplar	T
<i>Maclura pomifera</i>	Osage orange	T
<i>Magnolia macrophylla</i>	Bigleaf magnolia	T
<i>Morus rubra</i>	Red mulberry	T
<i>Nyssa sylvatica</i>	Blackgum	T
<i>Ostrya virginiana</i>	Eastern hophornbeam	T
<i>Oxydendrum arboreum</i>	Sourwood	T
PAULOWNIA TOMENTOSA	Princess-tree	T
<i>Pinus echinata</i>	Shortleaf pine	T
<i>Pinus taeda</i>	Loblolly pine	T
<i>Pinus virginiana</i>	Virginia pine	T
<i>Planera aquatica</i>	Water elm; planertree	T
<i>Platanus occidentalis</i>	Sycamore	T
<i>Prunus americana</i>	American plum	T
<i>Prunus serotina</i>	Black cherry	T
<i>Quercus alba</i>	White oak	T
<i>Quercus falcata</i>	Southern red oak	T
<i>Quercus marilandica</i>	Blackjack oak	T
<i>Quercus michauxii</i>	Swamp chestnut oak	T
<i>Quercus phellos</i>	Willow oak	T
<i>Quercus prinus</i>	Chestnut oak	T
<i>Quercus rubra</i>	Northern red oak	T
<i>Quercus shumardii</i>	Shumard oak	T
<i>Quercus stellata</i>	Post oak	T
<i>Quercus velutina</i>	Black oak	T
<i>Robinia pseudoacacia</i>	Black locust	T
<i>Salix nigra</i>	Black willow	T
<i>Sassafras albidum</i>	Sassafras	T
<i>Tilia americana</i>	American basswood	T
<i>Ulmus alata</i>	Winged elm	T
<i>Ulmus americana</i>	American elm	T
<i>Ulmus rubra</i>	Slippery elm	T
<i>Amphicarpaea bracteata</i>	American hogpeanut	V
<i>Apios americana</i>	Groundnut	V
<i>Berchemia scandens</i>	Alabama supplejack	V
<i>Bignonia capreolata</i>	Crossvine	V
<i>Campsis radicans</i>	Trumpet creeper	V
<i>Clematis virginiana</i>	Virgin's bower	V
DIOSCOREA OPPOSITIFOLIA	Chinese yam	V
<i>Dioscorea villosa</i>	Wild yam	V
EUONYMUS FORTUNEI	Wintercreeper	V
<i>Ipomoea pandurata</i>	Wild potato vine	V

<i>LONICERA JAPONICA</i>	Japanese honeysuckle	V
<i>Lonicera sempervirens</i>	Trumpet honeysuckle	V
<i>Menispermum canadense</i>	Canada moonseed	V
<i>Parthenocissus quinquefolia</i>	Virginia creeper	V
<i>Passiflora incarnata</i>	Purple passion-flower	V
<i>Passiflora lutea</i>	Yellow passionflower	V
<i>PUERARIA MONTANA</i>	kudzu	V
<i>Smilax bona-nox</i>	Saw greenbriar	V
<i>Smilax glauca</i>	Catbriar	V
<i>Smilax hugeri</i>	Huger's carrionflower	V
<i>Smilax rotundifolia</i>	Common greenbriar	V
<i>Smilax tamnoides</i>	Bristly greenbriar	V
<i>Vitis cinerea</i>	Graybark grape	V
<i>Vitis labrusca</i>	Fox grape	V
<i>Vitis rotundifolia</i>	Wild grape; muscadine	V

VERTEBRATE SPECIES

Federal Status abbreviations:

LE = listed as endangered

LT = listed as threatened

PS = listed as threatened or endangered in a portion of native range (none are protected within GA)

State Status abbreviations:

E = state listed as endangered

T = state listed as threatened

R = rare species

SC = special concern species

Amphibians

Common Name	Scientific Name	Federal Status	State Status
Blanchard's tree frog	<i>Acris crepitans blanchardi</i>		
northern cricket frog	<i>Acris crepitans crepitans</i>		
spotted salamander	<i>Ambystoma maculatum</i>		
American toad	<i>Bufo americanus</i>		
Fowler's toad	<i>Bufo woodhousii fowleri</i>		
spotted dusky salamander	<i>Desmognathus conanti</i>		
mountain dusky salamander	<i>Desmognathus ochrophaeus</i>		
blackbelly salamander	<i>Desmognathus quadramaculatus</i>		
southern two-lined salamander	<i>Eurycea cirrigera</i>		
eastern narrowmouth toad	<i>Gastrophryne carolinensis</i>		
gray treefrog	<i>Hyla versicolor</i>		
red-spotted newt	<i>Notophthalmus viridescens</i>		
slimy salamander	<i>Plethodon glutinosus</i>		
mountain chorus frog	<i>Pseudacris brachyphona</i>		SC
spring peeper	<i>Pseudacris crucifer</i>		
upland chorus frog	<i>Pseudacris feriarum</i>		
bullfrog	<i>Rana catesbeiana</i>		
green frog	<i>Rana clamitans melanota</i>		
pickerel frog	<i>Rana palustris</i>		
wood frog	<i>Rana sylvatica</i>		
southern leopard frog	<i>Rana utricularia</i>		

Reptiles

Common Name	Scientific Name	Federal Status	State Status
common snapping turtle	<i>Chelydra serpentina</i>		
painted turtle	<i>Chrysemys picta picta</i>		
northern black racer	<i>Coluber constrictor</i>		
timber rattlesnake	<i>Crotalus horridus</i>		
black rat snake	<i>Elaphe obsoleta obsoleta</i>		
five-lined skink	<i>Eumeces fasciatus</i>		
common map turtle	<i>Graptemys geographica</i>		R
black kingsnake	<i>Lampropeltis getula nigra</i>		

scarlet king snake	<i>Lampropeltis triangulum elapsoides</i>
common water snake	<i>Nerodia sipedon</i>
midland water snake	<i>Nerodia sipedon pleuralis</i>
rough green snake	<i>Opheodrys aestivus</i>
queen snake	<i>Regina septemvittata</i>
eastern fence lizard	<i>Sceloporus undulatus</i>
box turtle	<i>Terrapene carolina</i>
common slider	<i>Trachemys scripta</i>
red-eared slider	<i>Trachemys scripta elegans</i>
softshell turtle	<i>Trionyx sp.</i>

Fish

Common Name	Scientific Name	Federal Status	State Status
rock bass	<i>Ambloplites rupestris</i>		
yellow bullhead	<i>Ameiurus natalis</i>		
stoneroller	<i>Campostoma anomalum</i>		
large scale stoneroller	<i>Campostoma oligolepis</i>		
white sucker	<i>Catostomus commersonii</i>		
banded sculpin	<i>Cottus carolinae</i>		
greenside darter	<i>Etheostoma blennioides</i>		
rainbow darter	<i>Etheostoma caeruleum</i>		
blueside darter	<i>Etheostoma jessiae</i>		SC
redline darter	<i>Etheostoma rufilineatum</i>		SC
Tennessee snubnose darter	<i>Etheostoma simoterum</i>		
banded darter	<i>Etheostoma zonale</i>		SC
blackstripe topminnow	<i>Fundulus notatus</i>		
blackspotted topminnow	<i>Fundulus olivaceus</i>		
western mosquitofish	<i>Gambusia affinis</i>		
bigeye chub	<i>Hybopsis amplops</i>		
northern hog sucker	<i>Hypentilium nigricans</i>		
mountain brook lamprey	<i>Ichthyomyzon greeleyi</i>		
least brook lamprey	<i>Lampetra aepyptera</i>		
redbreast sunfish	<i>Lepomis auritus</i>		
redbreast-green hybrid	<i>Lepomis auritus X cyanellus</i>		
green sunfish	<i>Lepomis cyanellus</i>		
green-redear hybrid	<i>Lepomis cyanellus X microlophus</i>		
warmouth	<i>Lepomis gulosus</i>		
warmouth-bluegill hybrid	<i>Lepomis gulosus X macrochirus</i>		
bluegill	<i>Lepomis macrochirus</i>		
longear sunfish	<i>Lepomis megalotis</i>		
redear sunfish	<i>Lepomis microlophus</i>		
striped shiner	<i>Luxilus chrysocephalus</i>		
warpaint shiner	<i>Luxilus coccogenis</i>		
scarlet shiner	<i>Lythrurus fasciolaris</i>		SC
redeye bass	<i>Micropterus coosae</i>		
spotted bass	<i>Micropterus punctulatus</i>		
largemouth bass	<i>Micropterus salmoides</i>		
black redhorse	<i>Moxostoma duquesnei</i>		

golden redhorse	<i>Moxostoma erythrurum</i>	
logperch	<i>Percina caprodes</i>	
stargazing minnow	<i>Phenacobius uranops</i>	T
bluntnose minnow	<i>Pimephales notatus</i>	
black crappie	<i>Pomoxis nigromaculatus</i>	
blacknose dace	<i>Rhinichthys atratulus</i>	
creek chub	<i>Semotilus atromaculatus</i>	

Birds

Common Name	Scientific Name	Federal Status	State Status
Cooper’s Hawk	<i>Accipiter cooperii</i>		
Sharp-shinned Hawk	<i>Accipiter striatus</i>	PS	
Red-winged Blackbird	<i>Agelaius phoeniceus</i>		
Wood Duck	<i>Aix sponsa</i>		
Green-winged Teal	<i>Anas carolinensis</i>		
Mallard	<i>Anas platyrhynchos</i>		
American Black Duck	<i>Anas rubripes</i>		
American Pipit	<i>Anthus rubescens</i>		
Ruby-throated Hummingbird	<i>Archilochus colubris</i>		
Great Egret	<i>Ardea alba</i>		
Great Blue Heron	<i>Ardea herodias</i>		
Ring-necked Duck	<i>Aythya collaris</i>		
Tufted Titmouse	<i>Baeolophus bicolor</i>		
Cedar Waxwing	<i>Bombycilla cedrorum</i>		
Canada Goose	<i>Branta canadensis</i>		
Great Horned Owl	<i>Bubo virginianus</i>		
Red-tailed Hawk	<i>Buteo jamaicensis</i>		
Red-shouldered Hawk	<i>Buteo lineatus</i>		
Broad-winged Hawk	<i>Buteo platypterus</i>	PS	
Green Heron	<i>Butorides virescens</i>		
Pectoral Sandpiper	<i>Calidris melanotos</i>		
Chuck-will’s-widow	<i>Caprimulgus carolinensis</i>		
Whip-poor-will	<i>Caprimulgus vociferus</i>		
Northern Cardinal	<i>Cardinalis cardinalis</i>		
American Goldfinch	<i>Carduelis tristis</i>		
House Finch	<i>Carpodacus mexicanus</i>		Exotic
Turkey Vulture	<i>Cathartes aura</i>		
Hermit Thrush	<i>Catharus guttatus</i>		
Swainson’s Thrush	<i>Catharus ustulatus</i>		
Brown Creeper	<i>Certhia americana</i>		
Belted Kingfisher	<i>Ceryle alcyon</i>		
Chimney Swift	<i>Chaetura pelagica</i>		
Killdeer	<i>Charadrius vociferus</i>		
Northern Harrier	<i>Circus cyaneus</i>		
Sedge Wren	<i>Cistothorus platensis</i>		
Yellow-billed Cuckoo	<i>Coccyzus americanus</i>	PS	
Northern Flicker	<i>Colaptes auratus</i>		
Northern Bobwhite	<i>Colinus virginianus</i>	PS	
Eastern Wood-Pewee	<i>Contopus virens</i>		

Black Vulture	<i>Coragyps atratus</i>	
American Crow	<i>Corvus brachyrhynchos</i>	
Blue Jay	<i>Cyanocitta cristata</i>	
Cerulean Warbler	<i>Dendroica cerulea</i>	R
Yellow-rumped Warbler	<i>Dendroica coronata</i>	
Prairie Warbler	<i>Dendroica discolor</i>	
Yellow-throated Warbler	<i>Dendroica dominica</i>	
Magnolia Warbler	<i>Dendroica magnolia</i>	
Palm Warbler	<i>Dendroica palmarum</i>	
Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	
Pine Warbler	<i>Dendroica pinus</i>	
Black-throated Green Warbler	<i>Dendroica virens</i>	
Bobolink	<i>Dolichonyx oryzivorus</i>	
Pileated Woodpecker	<i>Dryocopus pileatus</i>	
Gray Catbird	<i>Dumetella carolinensis</i>	
Least Flycatcher	<i>Empidonax minimus</i>	SC
Acadian Flycatcher	<i>Empidonax virescens</i>	
American Kestrel	<i>Falco sparverius</i>	
Wilson's Snipe	<i>Gallinago delicata</i>	
Common Yellowthroat	<i>Geothlypis trichas</i>	
Sandhill Crane	<i>Grus canadensis</i>	PS
Worm-eating Warbler	<i>Helmitheros vermivorum</i>	
Barn Swallow	<i>Hirundo rustica</i>	
Wood Thrush	<i>Hylocichla mustelina</i>	
Yellow-breasted Chat	<i>Icteria virens</i>	
Orchard Oriole	<i>Icterus spurius</i>	
Dark-eyed Junco	<i>Junco hyemalis</i>	
Hooded Merganser	<i>Lophodytes cucullatus</i>	
Eastern Screech-owl	<i>Megascops asio</i>	
Eastern Screech-owl	<i>Megascops asio</i>	
Red-bellied Woodpecker	<i>Melanerpes carolinus</i>	
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	
Wild Turkey	<i>Meleagris gallapavo</i>	
Swamp Sparrow	<i>Melospiza georgiana</i>	
Song Sparrow	<i>Melospiza melodia</i>	
Northern Mockingbird	<i>Mimus polyglottos</i>	
Black-and-white Warbler	<i>Mniotilta varia</i>	
Brown-headed Cowbird	<i>Molothrus ater</i>	
Great Crested Flycatcher	<i>Myiarchus crinitus</i>	
Connecticut Warbler	<i>Oporornis agilis</i>	
Kentucky Warbler	<i>Oporornis formosus</i>	
Northern Parula	<i>Parula americana</i>	
Savannah Sparrow	<i>Passerculus sandwichensis</i>	
Fox Sparrow	<i>Passerella iliaca</i>	
Blue Grosbeak	<i>Passerina caerulea</i>	
Indigo Bunting	<i>Passerina cyanea</i>	
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	
Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	

Downy Woodpecker	<i>Picoides pubescens</i>	
Hairy Woodpecker	<i>Picoides villosus</i>	
Eastern Towhee	<i>Pipilo erythrophthalmus</i>	
Scarlet Tanager	<i>Piranga olivacea</i>	
Summer Tanager	<i>Piranga rubra</i>	
Carolina Chickadee	<i>Poecile carolinensis</i>	
Blue-gray Gnatcatcher	<i>Polioptila caerulea</i>	
Vesper Sparrow	<i>Pooecetes gramineus</i>	
Purple Martin	<i>Progne subis</i>	
Common Grackle	<i>Quiscalus quiscula</i>	
Ruby-crowned Kinglet	<i>Regulus calendula</i>	
Golden-crowned Kinglet	<i>Regulus satrapa</i>	
Eastern Phoebe	<i>Sayornis phoebe</i>	
American Woodcock	<i>Scolopax minor</i>	
Ovenbird	<i>Seiurus aurocapilla</i>	
Louisiana Waterthrush	<i>Seiurus motacilla</i>	
American Redstart	<i>Setophaga ruticilla</i>	
Eastern Bluebird	<i>Sialia sialis</i>	
Red-breasted nuthatch	<i>Sitta canadensis</i>	
White-breasted Nuthatch	<i>Sitta carolinensis</i>	
Brown-headed Nuthatch	<i>Sitta pusilla</i>	
Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	
Chipping Sparrow	<i>Spizella passerina</i>	
Field Sparrow	<i>Spizella pusilla</i>	
Northern Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	
Barred Owl	<i>Strix varia</i>	
European Starling	<i>Stumus vulgaris</i>	Exotic
Eastern Meadowlark	<i>Sturnella magna</i>	
Tree Swallow	<i>Tachycineta bicolor</i>	
Carolina Wren	<i>Thryothorus ludovicianus</i>	
Brown Thrasher	<i>Toxostoma rufum</i>	
Solitary Sandpiper	<i>Tringa solitaria</i>	
House Wren	<i>Troglodytes aedon</i>	
Winter Wren	<i>Troglodytes troglodytes</i>	SC
American Robin	<i>Turdus migratorius</i>	
Eastern Kingbird	<i>Tyrannus tyrannus</i>	
Tennessee Warbler	<i>Vermivora peregrina</i>	
Blue-winged Warbler	<i>Vermivora pinus</i>	
Nashville Warbler	<i>Vermivora ruficapilla</i>	
Yellow-throated Vireo	<i>Vireo flavifrons</i>	
White-eyed Vireo	<i>Vireo griseus</i>	
Red-eyed Vireo	<i>Vireo olivaceus</i>	
Philadelphia Vireo	<i>Vireo philadelphicus</i>	
Canada Warbler	<i>Wilsonia canadensis</i>	
Hooded Warbler	<i>Wilsonia citrina</i>	
Mourning Dove	<i>Zenaida macroura</i>	
White-throated Sparrow	<i>Zonotrichia albicollis</i>	

Mammals

Common Name	Scientific Name	Federal Status	State Status
domestic dog	<i>Canis familiaris</i>		
coyote	<i>Canis latrans</i>		
beaver	<i>Castor canadensis</i>		
Virginia opossum	<i>Didelphis virginianus</i>		
red bat	<i>Lasiurus borealis</i>		
hoary bat	<i>Lasiurus cinereus</i>		
North American river otter	<i>Lontra canadensis</i>		
bobcat	<i>Lynx rufus</i>		
groundhog	<i>Marmota monax</i>		
striped skunk	<i>Mephitis mephitis</i>		
meadow vole	<i>Microtus pennsylvanicus</i>		
pine/woodland vole	<i>Microtus pinetorum</i>		
mink	<i>Mustela vison</i>		
gray bat	<i>Myotis grisescens</i>	LE	E
little brown bat	<i>Myotis lucifugus</i>		
northern long-eared bat	<i>Myotis septentrionalis</i>		
evening bat	<i>Nycticeius humeralis</i>		
golden mouse	<i>Ochrotomys nuttalli</i>		
white-tailed deer	<i>Odocoileus virginianus</i>		
muskrat	<i>Ondatra zibethicus</i>		
marsh rice rat	<i>Oryzomys palustris</i>		
cotton mouse	<i>Peromyscus gossypinus</i>		
white-footed mouse	<i>Peromyscus leucopus</i>		
deer mouse	<i>Peromyscus maniculatus</i>		
eastern pipistrelle	<i>Pipistrellus subflavus</i>		
raccoon	<i>Procyon lotor</i>		
eastern harvest mouse	<i>Reithrodontomys humulis</i>		
eastern gray squirrel	<i>Sciurius carolinensis</i>		
fox squirrel	<i>Sciurius niger</i>		
hispid cotton rat	<i>Sigmodon hispidus</i>		
eastern cottontail	<i>Sylvilagus floridanus</i>		
marsh rabbit	<i>Sylvilagus palustris</i>		
eastern chipmunk	<i>Tamias striatus</i>		
gray fox	<i>Urocyon cinereoargenteus</i>		
red fox	<i>Vulpes vulpes</i>		

AQUATIC INVERTEBRATES

Phylum	Class	Order	Family	Species	State Status
COELENTERATA	Hydrozoa		Hydridae	<i>Hydra americana</i>	
PLATYHELMINTHES	Turbellaria	Tricladida	Dugesiidae	<i>Girardia (Dugesia) tigrina</i> <i>Cura foremanii</i>	
NEMATODA	unk	unk	unk	undetermined sp.	
MOLLUSCA	Gastropoda	Basommatophora	Ancylidae	<i>Ferrissia rivularis</i>	
			Lymnaeidae	<i>Fossaria sp.</i>	
			Physidae	<i>Physella sp.</i>	
			Planorbidae	<i>Gyraulus parvus</i>	
			Pleuroceridae	<i>Elimia cf. Clavaeformis</i> <i>Elimia sp.</i> <i>Leptoxis praerosa</i>	SC
	Bivalvia	Veneroida	Viviparidae	<i>Campelema decisum</i>	
			Corbiculidae	<i>Corbicula fluminea</i>	
			Sphaeriidae	<i>Musculium parturiseum</i> <i>Musculium transversum</i> <i>Pisidium sp.</i> <i>Sphaerium fabale</i> <i>Sphaerium sp.</i>	
ANNELIDA	Clitellata	Branchiobdellida	Branchiobdellidae	undetermined sp.	
		Haplotaxida	Enchytraeidae	undetermined sp.	
			Lumbricidae	undetermined sp.	
			Naididae	<i>Arcteonais lomondi</i> <i>Dero sp.</i> <i>Nais bretscheri</i> <i>Nais bretscheri</i>	

ANNELIDA	Clitellata	Haplotaxida	Naididae	<i>Nais communis</i> <i>Nais sp.</i> <i>Slavina appendiculata</i> <i>Stylaria lacustris</i> undetermined sp. undetermined sp.	
			Lumbriculida	Lumbriculidae	undetermined sp.
		Tubificida	Tubificidae w.o.h.c.	<i>Limnodrilus claparedianus</i> <i>Limnodrilus hoffmeisteri</i> <i>Limnodrilus sp.</i> undetermined sp.	
		Hirudinea	Rhynchobdellida	Glossiphoniidae	<i>Helobdella sp.</i>
	ARTHROPODA	Arachnida	Acariformes	Hygrobatidae	<i>Atractides sp.</i>
				Lebertiidae	<i>Lebertia sp.</i>
		Crustacea	Amphipoda	Crangonyctidae	<i>Crangonyx sp.</i>
				Hyalellidae	<i>Hyalella azteca</i>
			Cladocera	Chydoridae	<i>Alona sp.</i>
Daphnidae				<i>Daphnia sp.</i>	
Copepoda			unk	undetermined sp.	
Cyclopoida			unk	undetermined sp.	
			unk	undetermined sp.	
Decapoda				Cambaridae	<i>Cambarus sp.</i> <i>Orconectes sp.</i> <i>Procambarus sp.</i>
Insecta			Isopoda		Asellidae
		Ostracoda		Candoniidae	<i>Candona sp.</i>
				unk	undetermined sp.
		Coleoptera		Curculionidae	undetermined sp.
	Dryopidae			<i>Copelatus sp.</i> <i>Helichus basalis</i> <i>Helichus sp.</i>	
Dytiscidae	<i>Hydroporus sp.</i>				
Elmidae	<i>Ancyronyx variegata</i> <i>Dubiraphia quadrinotata</i> <i>Dubiraphia sp.</i>				

ARTHROPODA	Insecta	Coleoptera	Elmidae	<i>Dubiraphia vittata</i> <i>Macronychus glabratus</i> <i>Microcylloepus pusillus</i> <i>Optioservus ovalis</i> <i>Optioservus sp.</i> <i>Oulimnius latiusculus</i> <i>Promoresia sp.</i> <i>Stenelmis sp.</i>
			Gyrinidae	<i>Dineutus sp.</i>
			Haliplidae	<i>Peltodytes sp.</i>
			Hydrophilidae	<i>Helochares sp.</i> <i>Stactobiella sp.</i>
			Psephenidae	<i>Psephenus herricki</i>
			Ptilodactylidae	<i>Anchytarsus bicolor</i>
			Scirtidae	<i>Cyphon sp.</i>
	Collembola		unk	undetermined sp.
	Diptera		Athericidae	<i>Atheric lantha</i>
			Ceratopogonidae	<i>Bezzia/Palpomyia gp.</i>
			Chaoboridae	<i>Chaoborus punctipennis</i>
			Chironomidae	<i>Lopescladius sp.</i> <i>Ablabesmyia annulata</i> <i>Ablabesmyia mallochi</i> <i>Ablabesmyia rhamphe gp.</i> <i>Ablabesmyia sp.</i> <i>Brillia flavifrons</i> <i>Cardiocladius obscurus</i> <i>Chaetocladius sp.</i> <i>Chironomus sp.</i> <i>Cladopelma sp.</i> <i>Cladotanytarsus sp.</i> <i>Clinotanypus pinguis</i> <i>Clinotanypus sp.</i> <i>Conchapelopia sp.</i> <i>Corynoneura sp.</i> <i>Cricotopus bicinctus</i> <i>Cricotopus sp.</i>

ARTHROPODA	Insecta	Diptera	Chironomidae	<i>Cricotopus tremulus</i> <i>Cryptochironomus fulvus</i> <i>Cryptochironomus sp.</i> <i>Diamesa sp.</i> <i>Dicrotendipes neomodestus</i> <i>Dicrotendipes sp.</i> <i>Diplocladius cultriger</i> <i>Einfeldia natchitocheae</i> <i>Eukiefferiella claripennis gp.</i> <i>Eukiefferiella devonica gp.</i> <i>Hydrobaenus sp.</i> <i>Larsia sp.</i> <i>Limnophyes sp.</i> <i>Micropsectra sp.</i> <i>Microtendipes pedellus gp.</i> <i>Microtendipes sp.</i> <i>Monopelopia sp.</i> <i>Nanocladius sp.</i> <i>Natarsia sp.</i> <i>Nilotanypus fimbriatus</i> <i>Nilotanypus sp.</i> <i>Orthocladius (Symposiocladius)</i> <i>lignicola</i> <i>Orthocladius sp.</i> <i>Pagastia sp.</i> <i>Paracladopelma sp.</i> <i>Parakiefferiella sp.</i> <i>Paralauterborniella</i> <i>nigrohalteralis</i> <i>Parametriocnemus lundbecki</i> <i>Parametriocnemus sp.</i> <i>Paratanytarsus sp.</i> <i>Paratendipes sp.</i> <i>Pentaneura sp.</i> <i>Phaenopsectra punctipes gp.</i> <i>Phaenopsectra sp.</i> <i>Polypedilum flavum (convictum)</i>
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ARTHROPODA	Insecta	Diptera	Chironomidae	<i>Polypedilum halterale gp.</i> <i>Polypedilum illinoense</i> <i>Polypedilum sp.</i> <i>Pothastia longimana</i> <i>Procladius bellus</i> <i>Procladius sp.</i> <i>Prodiamesa olivacea</i> <i>Psectrocladius sp.</i> <i>Psectrocladius sp.</i> <i>Pseudochironomus sp.</i> <i>Pseudorthocladius sp.</i> <i>Rheocricotopus robacki</i> <i>Rheocrocotopus glacricollis</i> <i>Rheotanytarsus exiguus gp.</i> <i>Rheotanytarsus sp.</i> <i>Smittia sp.</i> <i>Stempellina sp.</i> <i>Stictochironomous sp.</i> <i>Synorthocladius semivirens</i> <i>Tanypus stellatus</i> <i>Tanytarsus sp.</i> <i>Thienemanniella sp.</i> <i>Thienemanniella xena</i> <i>Thienemannimyia sp.</i> <i>Tribelos jucundum</i> <i>Tvetenia bavarica gp.</i> <i>Tvetenia paucunca</i> <i>Tvetenia sp.</i> <i>Tvetenia vitracies</i> <i>Zaverlia sp.</i> <i>Zaverliella sp.</i> <i>Zavreliomyia sp.</i> undetermined sp. <i>Dixa sp.</i> <i>Hemerodromia sp.</i> <i>Pericoma sp.</i>
			Culicidae	
			Dixidae	
			Empididae	
			Psychodidae	

ARTHROPODA	Insecta	Diptera		Species Lists
			Simuliidae	<i>Simulium sp.</i>
			Stratiomyidae	<i>Myxosargus sp.</i>
			Stratiomyidae	<i>Odontomyia sp.</i>
			Tabanidae	<i>Chrysops sp.</i>
				<i>Tabanus sp.</i>
			Tipulidae	<i>Antocha sp.</i>
				<i>Hexatoma sp.</i>
				<i>Limnophila sp.</i>
				<i>Ormosia sp.</i>
				<i>Pseudolimmophila sp.</i>
				<i>Tipula sp.</i>
		Ephemeroptera	Acanthametropodidae	<i>Ameletus sp.</i>
			Baetidae	<i>Acentrella ampla</i>
				<i>Acentrella sp.</i>
				<i>Acerpenna sp.</i>
				<i>Baetis flavistriga</i>
				<i>Baetis intercalaris</i>
				<i>Baetis sp.</i>
				<i>Centroptilum sp.</i>
				<i>Dipheter hageni</i>
				<i>Plauditus sp.</i>
				<i>Pseudocloeon sp.</i>
			Caenidae	<i>Caenis sp.</i>
			Ephemerellidae	<i>Attenella sp.</i>
				<i>Ephemerella sp.</i>
				<i>Eurylophella sp.</i>
				<i>Serratella sp.</i>
			Ephemeridae	<i>Hexagenia sp.</i>
			Heptageniidae	<i>Maccaffertium (Stenonema) sp.</i>
				<i>Stenacron interpunctatum</i>
				<i>Stenonema femoratum</i>
			Heptageniidae	<i>Stenonema mediopunctatum</i>
				<i>Stenonema sp.</i>
				<i>Stenonema terminatum</i>
			Isonychiidae	<i>Isonychia sp.</i>
			Leptophlebiidae	<i>Leptophlebia sp.</i>

ARTHROPODA	Insecta			Species Lists
		Ephemeroptera		<i>Paraleptophlebia sp.</i>
		Hemiptera	Veliidae	<i>Rhagovelia obesa</i>
		Megaloptera	Corydalidae	<i>Corydalus cornutus</i>
				<i>Nigronia serricornis</i>
			Sialidae	<i>Sialis sp.</i>
		Odonata	Aeshnidae	<i>Basiaeschna janata</i>
				<i>Boyeria vinosa</i>
			Calopterygidae	<i>Calopteryx maculata</i>
				<i>Calopteryx sp.</i>
			Coenagrionidae	<i>Argia sp.</i>
				<i>Enallagma sp.</i>
			Cordulegastridae	<i>Cordulegaster sp.</i>
			Corduliidae	<i>Epithea (Epicordulia) sp.</i>
			Gomphidae	<i>Gomphus sp.</i>
				<i>Hagenius brevistylus</i>
				<i>Lanthus parvulus</i>
				<i>Lanthus sp.</i>
				<i>Stylogomphus albistylus</i>
			Libellulidae	<i>Erythemis simplicicollis</i>
				<i>Perithemis sp.</i>
		Plecoptera	Capniidae	undetermined sp.
			Leuctridae	<i>Leuctra sp.</i>
			Nemouridae	<i>Amphinemura delosa</i>
				<i>Amphinemura sp.</i>
			Perlidae	<i>Acroneuria abnormis</i>
				<i>Acroneuria evoluta</i>
				<i>Acroneuria sp.</i>
				<i>Perlesta placida sp. gp.</i>
				<i>Perlesta sp.</i>
			Perlodidae	<i>Isoperla sp.</i>
				undetermined sp.
		Plecoptera	Taeniopterygidae	<i>Taeniopteryx sp.</i>
		Trichoptera	Calamoceratidae	<i>Anisocentropus pyraloides</i>
			Glossosomatidae	<i>Agapetus sp.</i>
				<i>Glossosoma sp.</i>
			Goeridae	<i>Goera sp.</i>

Appendix F

Species Lists

ARTHROPODA	Insecta	Trichoptera	Hydropsychidae	<i>Ceratopsyche morosa</i> <i>Ceratopsyche sp.</i> <i>Cheumatopsyche sp.</i> <i>Hydropsyche betteni gp.</i> <i>Hydropsyche sp.</i>
			Hydroptilidae	<i>Hydroptila sp.</i>
			Leptoceridae	<i>Ceraclea sp.</i> <i>Oecetis avara</i> <i>Oecetis sp.</i> <i>Triaenodes sp.</i>
			Limnephilidae	<i>Pycnopsyche sp.</i>
			Philopotamidae	<i>Chimarra aterrima</i> <i>Chimarra obscurus</i> <i>Chimarra sp.</i>
			Phryganeidae	<i>Ptilostomis sp.</i>
			Polycentropodidae	<i>Phylocentropus sp.</i> <i>Polycentropus sp.</i>
			Psychomyiidae	<i>Lype diversa</i>
			Rhyacophilidae	<i>Rhyacophila carolina</i> <i>Rhyacophila fenestrata/ledra</i> <i>Rhyacophila sp.</i>
			Uenoidae	<i>Neophylax fuscus</i> <i>Neophylax sp.</i>

APPENDIX G

American Indian Tribes Consulted by Tennessee Army National Guard

(Tribes printed in grey have indicated that they do not have an interest in the land making up the VTS-Catoosa.)

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Absentee Shawnee Tribe of Oklahoma

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Bryant Celestine, Historic Preservation Officer
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APPENDIX H

Pest Management Forms:

General Information

List of Approved Pesticide Chemicals for Use on VTS-C

Format for Reporting Pesticide/Herbicide Applications

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GENERAL PEST MANAGEMENT INFORMATION

- Pest management activities on TNARNG properties are guided by the TNARNG Integrated Pest Management Plan.
- Only certified applicators may apply any herbicide or pesticide (general use or restricted use) on TNARNG facilities. Applicator must have either a DoD Pesticide Applicator Certification or a Tennessee Commercial Applicator Certification for the appropriate category of pesticide.
- All pesticide/herbicide applications made by contractor or TNARNG staff will be reported to the Pest Management Coordinator (PMC). The reporting form to be used is included in this Appendix. Contact information for the PMC is located at the bottom of the forms.
- Control of pests of facilities (e.g., termites, spiders, mice) is handled through contract by the training site maintenance office. Contract exterminators may only apply the approved pesticides listed below. Contract exterminators will fill out a Pest Control Treatment Record completely for each chemical utilized on a visit. The training site will submit a copy of this form to the PMC (see bottom of reporting form for contact information).
- Weed control and turf maintenance applications may be made by state certified applicators on staff. All in-house applications of herbicides and pesticides must be reported to the PMC quarterly.
- In certain situations, a non-certified person may apply a pesticide on a self-help basis for personal protection on a job site. The following limitations apply to self-help pesticide applications:
 - Self-help applications will include only those products listed for self-help. Applications of these products must be reported to the PMC annually.
 - Self-help applications are for personal safety and comfort within the workplace and as such will be made only to small areas. Applications to an entire building or armory do not qualify as self-help. If a large portion of the facility requires treatment, a contracted pesticide applicator is needed.
 - Food preparation areas are NOT to be treated with self-help applications. Kitchens and related areas require professional treatment.

SELF-HELP PRODUCTS:

Product description	Brand name examples	Active ingredient (s)
Cockroach bait station	Combat Quick Kill	Fipronil
Ant bait station	MaxForce Ant Bait	Fipronil
Ant bait	Advance Dual Choice Amdro Fire Ant Bait	N-ethyl perfluorooctane sulfonamide
	Amdro Fire Ant Bait	Hydramethylnon
Aerosol insecticide	Kill Zone House & Garden Insect Killer Formula 3	D-trans Allethrin, 0.15%, and Resmethrin, 0.2%
	PT 565 Plus XLO	Pyrethrin
Wasp spray	PT 515 Wasp Freeze and Hornet Killer	pyrethrin, allethrin, d-phenothrin, or resmethrin
	Wasp Stopper II Plus	
Boric acid (roach killer)	Roach Kill	boric acid
Roach trap	Mr. Sticky	NA
Rodent glue trap	Victor Holdfast	NA
Spring mouse trap	NA	NA
Fly swatter	NA	NA
Indoor Fly Catcher, cylindrical sticky trap	NA	NA
Insect Fly Catcher, sticky strips	NA	NA

For more information on self-help applications, contact the PMC.

**APPROVED PESTICIDES FOR USE
ON TENNESSEE ARMY NATIONAL GUARD PROPERTIES**

Generic formulations of identical chemical composition may be substituted for these trade-name approved pesticides.

Product Name	Chemical Name	% of A.I.	EPA #
Mosquito - Larvae			
Agnique MMF	POE isooctadecanol	100	53263-28
Altosid	S-Methoprene	8.62	2724-375
Altosid LL	S-Methoprene	20	2724-446
Altosid Pellets	S-Methoprene	4.25	2724-448
Altosid XR	S-Methoprene	2.1	2724-421
Bactimos Briquets/Mosquito Dunks	Bti	10.31	6218-47
Vectolex-CG	Bacillus sphaericus	7.5	73049-20
Mosquito - Adults			
Aqua-Reslin	Permethrin Piperonyl butoxide	20 20	432-796
Bio-Mist 1.5 + 7.5	Permethrin Piperonyl butoxide	1.5 7.5	8329-40
Fyfanon	Malathion	96.5	67760-34
Kontrol 4,4	Permethrin Piperonyl butoxide	4.6 4.6	73748-4
Mosquito Beater	Naphthalene Butoxypolypropylene glycol	4.5 0.5	4-123
Permanone 10%EC	Permethrin	10	432-1132
Scourge 4+12	Resmethrin Piperonyl butoxide	4.14 12.42	432-716
ULD BP-100	Pyrethrin Piperonyl butoxide Octacide-264	1 2 2.94	499-452
ULD BP-300	Pyrethrin Piperonyl butoxide Octacide-264	3 6 10	499-450
Fire Ants			
Amdro Pro	Hydramethylnon	0.73	241-322
Avenger	Deltamethrin	0.05	40208-6
Award Fire Ant Bait	Fenoxcarb	1	100-722
Chipco Top Choice Fire Ant Bait	Fipronil	0.0143	432-1217
Maxforce Fire Ant Bait	Hydramethylnon	1	432-1265
Filth Flies			
Golden Malrin	Methomyl Muscamone	1.1 0.049	2724-274
Stimukil Fly Bait	Methomyl Muscamone	1 0.04	53871-3

Product Name	Chemical Name	% of A.I.	EPA #
Termites			
Bora-Care	Boron sodium oxide	40	64405-1
Dursban TC	Chlorpyrifos	44.9	62719-47
Premise 75	Imidacloprid	75	3125-455
Termidor 80WG	Fipronil	80	7969-209
Termidor SC	Fipronil	9.1	7969-210
Tim-Bor Professional	Boron sodium oxide	98	64405-8
Bees & Wasps			
Prescription Treatment Wasp-Freeze	D-Phenothrin D-trans-Allethrin	0.12 0.129	499-362
General Arthropod Control			
Advance Ant Bait	Abamectin	0.011	499-370
Borid	Boric acid	99	9444-129
Catalyst	Propetamphos	18.9	2724-450
CB-80 Extra	Pyrethrin Piperonyl butoxide	0.5 4	9444-175
Cynoff EC	Cypermethrin	24.8	279-3081
DeltaDust	Deltamethrin	0.05	432-772
DeltaGard G	Deltamethrin	0.1	432-836
Demand CS	Lamda-cyhalothrin	9.7	100-1066
Demon EC	Cypermethrin	25.3	100-1004
Drax Ant Bait	Boric Acid	5	9444-131
Drione	Pyrethrin Piperonyl butoxide Silica gel	1 10 40	432-992
Dual Choice Ant Bait	Sulfluramid	0.5	499-459
Gentrol Point Source	Hydropene	90.6	2724-469
Kicker	Pyrethrin Piperonyl butoxide	6 60	432-1145
Maxforce Gel	Hydramethylnon	2.15	432-1254
Maxforce Roach Bait	Fipronil	0.05	432-1460
Niban Bait	Boric acid	5	64405-2
Nylar IGR	Nylar	1.3	11715-307-57076
PCO Fogger	Nylar Belmark Prallethrin	0.6 0.1 0.04	9444-168
Perma-Dust	Boric acid	35.5	499-384
PI Contact	Pyrethrin Piperonyl butoxide	0.5 4	499-444
Precor Plus Fogger	Permethrin	0.58	2724-454
PT565 Plus XLO	Pyrethrin Piperonyl butoxide Octacide-264	0.5 1 1	499-290
R Value's Roach Kill	Boric acid	99	9444-130
Saga WP	Tralomethrin	40	432-755
Sevin 80S	Sevin	80	264-316

Product Name	Chemical Name	% of A.I.	EPA #
General Arthropod, Cont.			
Suspend SC	Deltamethrin	4.75	432-763
Tempo SC Ultra	Cyfluthrin		3125-498
Tempo 20WP	Cyfluthrin		3125-377
ULD BP-100	Pyrethrin	1	499-452
	Piperonyl butoxide	2	
	Octacide-264	2.94	
ULD BP-300	Pyrethrin	3	499-450
	Piperonyl butoxide	6	
	Octacide-264	10	
Ultracide	Nylar	0.1	499-404
	Pyrethrin	0.05	
	Permethrin	0.4	
	Octacide-264	0.4	
Zero-In 797-A	Pyrethrin	1	432-992-70799
	Piperonyl butoxide	10	
	Silica gel	40	
Rodents and Other Vertebrates			
Confrac Rodenticide	Bromadiolone	0.005	12455-69
Ditrac Blox	Diphacinone	0.005	12455-80
Fastrac Pacs	Bromethalin	0.01	12455-97
Final All-Weather Blox	Brodifacoum	0.005	12455-89
Talon-G Pellets	Brodifacoum	0.005	100-1052
WeatherBlok XT	Brodifacoum	0.005	100-1055
4-the-Birds	Polybutene	93	8254-5-56
All Vegetation – Bare Ground			
Arsenal	Imazapyr	27.6	241-273
Escort	Metsulfuron	60	352-439
Hyvar XL	Bromacil	21.9	352-346
Krovar IDF	Bromacil	40	352-505
	Diuron	40	
Oust XP	Sulfometuron	75	352-601
Outrider	Sulfosulfuron	75	524-500
Reward Aquatic Herbicide	Diquat dibromide	37.3	100-1091
Round-up Pro	Glyphosate	41	524-475
Round-up Ultra	Glyphosate	41	524-475
Round-up UltraDry	Glyphosate	71.4	524-504
Sahara DG	Imazapyr	7.78	241-372
	Diuron	62.22	
Pre-emergent Herbicide			
Balan 2.5G	Benfluralin	2.5	62179-96
Banvel + 2,4-D	Dicamba	12.4	66330-287
	2,4-D	35.7	

Product Name	Chemical Name	% of A.I.	EPA #
Pre-emergent, Cont.			
Gordon's Pro Turf & Ornamental Barrier	Dychlobenil	4	2217-675
Surflan A.S.	Oryzalin	40.4	70506-44
MSMA	Monosodium methanearsonate	47.6	19713-42
Pennant (grasses)	S-Metolachor	83.7	100-950
Selective Post-emergent			
MSMA (grasses)	Monosodium methanearsonate	47.6	19713-42
Poast (grasses)	Sethoxydim	18	7969-58
Gordon's Pro Trimec Plus (broadleaf)	Dicamba MSMA 2,4 D Mecoprop-p	1.46 18 5.83 2.93	2217-808
Cool Season Grasses			
Plateau	Imazipic-ammonium	23.6	241-365
Plant Growth Regulator			
Cutless 50W	Flurprimidol	50	67690-15
Embark	Mefluidide	28	2217-759
Primo	Cimectacarb	12	100-729
Brush & Forestry			
Accord Site Prep	Glyphosate	41	62719-322
Arsenal	Imazapyr	27.6	241-273
Garlon 3A	Triethylamin triclopyr	44.4	62719-37
Garlon 4	Butoxyethyl triclopyr	61.6	62719-40
Escort	Metsulfuron	60	352-439
Oust XP	Sulfometuron	75	352-601
Round-up Pro	Glyphosate	41	524-475
Tordon K	Picloram	24.4	62719-17
Velpar L	Hexazinone	25	352-392
Velpar ULW	Hexazinone	75	352-450
Aquatic Weeds & Algae			
Aquashade	Acid Blue 9 Acid Yellow 23	23.63 2.39	33068-1
Citrine Ultra Algaecide	Copper	9	8959-53
Reward	Diquat dibromide	37.3	100-1091
Rodeo	Glyphosate	53.8	62719-324
Sonar AS	Fluoridone	41.7	67690-4
2,4-D amine 4	2,4-D	47.3	1381-103

Pest Control Treatment Record

(Have the contractor fill this form out or provide a printed receipt providing all information.)

Site: _____ Treatment Date: _____

Location of Treatment: _____

Type of Pest Problem: _____

Indicators of Pest Problem: _____

(What did you observe and where? Number of pests seen, signs of damage,...)

Chemical Pesticide/Herbicide Application

Pest control contractors must be state-certified for commercial application – include copy of certification if not on file with contract.

Pesticide/Herbicide Trade Name: _____

EPA Registration Number: _____

Active Ingredient(s) and % Concentration: _____ %

_____ %

_____ %

Quantity of Concentrate Used (if applicable): _____

Quantity of Finished Pesticide Applied: _____

% Active Ingredient as Applied: _____ %

Size of Treated Area: _____

Application Rate: _____

Applicator Name: _____ Certification # _____

Man Hours Used: _____ Category(s) _____

Pest Control Company: _____ License # _____

Maintain copies of this form on site.

Send copies quarterly to: TNARNG
 Attn: Laura Lecher
 Milan Training Site
 325 Arsenal Lane
 Milan, Tennessee 38348-2605
 Or Fax: (731)222-5323

For more information call: (731)222-5321 or email: Laura.Lecher@us.army.mil

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APPENDIX I

Annual Review of the INRMP

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INRMP ANNUAL REPORT**To:****From:****Subject:** ARNG Annual Report on Implementation Status of the Integrated Natural Resource Management Plan (INRMP)**Date:****Reporting Period:***(Period report covers, i.e. 1 May 06 – 1 May 07.)***Annual Coordination Meeting:** *(Identify the date and attendees of annual coordination. Indicate if this correspondence will be used in lieu of 'face-to-face' meetings. Use the following headers to document review findings)***Program Overview:** *(Short paragraph addressing the goals and objectives of the plan, the status of the mission requirements relative to the current plan and the issue of "no net loss" to training.)***Current Implementation Status:** *(List all projects for the current reporting period, those completed or on-going, and those that were planned but not initiated. Also indicate if any projects were rescheduled and the proposed new timeline. If a table is already available, paste in or submit as separate sheet and reference here.)***Proposed Implementation:** *(List all projects and actions planned for the next reporting period. If a table is already available, paste in or submit as a separate sheet and reference here.)***Installation Personnel:** *(List by title natural and cultural resource management personnel involved with implementation of the INRMP.)***USFWS Regional Office Contact Information:** *(Enter Point of Contact and contact information.)***USFWS Field Office Contact Information:** *(Enter Point of Contact and contact information.)***State Fish and Game Agency Contact Information:** *(Enter Point of Contact and contact information as applicable. Include all agencies or division involved.)*

