Fort Campbell
Integrated Natural Resources Management Plan
2020–2025
Programmatic Environmental Assessment

Prepared for
101st Airborne Division (Air Assault) and Fort Campbell

Prepared by
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Finding of No Significant Impact (FONSI): Implementation of the 2020-2025 Integrated Natural Resources Management Plan (INRMP) for Fort Campbell, Kentucky

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Fort Campbell has prepared a Programmatic Environmental Assessment (PEA) that evaluates the potential environmental impacts associated with the implementation of the 2020-2025 Integrated Natural Resources Management Plan (INRMP), and all associated plans and actions, for Fort Campbell, Kentucky. During the preparation of the PEA, the proposed action, no management and no-action alternatives were evaluated. After careful consideration, it was determined that only the proposed action would satisfy the Army's requirement without causing significant environmental impacts and incurring substantial additional costs. The attached PEA was prepared pursuant to 32 Code of Federal Regulations Part 651 and U.S. Council on Environmental Quality regulations (Title 40, U.S. Code, Parts 1500-1508) for implementing the procedural requirements of the National Environmental Policy Act.

Description of the Proposed Action

The Proposed Action is to fully implement the Fort Campbell INRMP. The INRMP provides a comprehensive list of resource goals, objectives, management actions, and monitoring activities that are planned for implementation between fiscal years 2020 and 2025, inclusive. It utilizes information from the various baseline studies and surveys to establish and implement multiple-use practices in support of the training mission. However, execution of actions is contingent upon receipt of adequate funds. While Fort Campbell will attempt to implement all of the projects planned for each fiscal year, only a portion of planned projects may be executed depending upon the appropriation for that fiscal year. Provided the INRMP is fully implemented according to the definition of DODI 4715.03, the conclusions of this assessment are valid even if 100 percent of planned projects are not implemented in a given fiscal year.

No Action Alternative

Under the No Action Alternative, natural resources on Fort Campbell would be managed without implementing the INRMP 2020-2025, essentially maintaining the status quo of ecosystem management. Natural resources would be managed according to existing valid component plans, applicable federal and state laws, and DoD guidance (e.g., AR 200-1, CAM Reg 200 -1, CAM Reg 385 -5). Implementation of these plans and policies would take place without integration between component plans, and without overall coordination of natural resources management with the military mission.

No Management Alternative

Under the No Management Alternative, the INRMP would not be implemented and no management of natural resources would take place on Fort Campbell. The No Management Alternative would result in non-compliance with the Sikes Act, DoDI 4715.03, and AR 200-1. The No Management Alternative would result in non-compliance with the Sikes Act, DoDI 4715.03, and AR 200-1. The No Management Alternative is not feasible because it is likely to result in significant violation of federal and state regulations and does not support the military mission. Therefore, the No Management Alternative is dismissed from further consideration and is not carried forward through detailed analysis in this PEA.

Environmental Consequences

Nine broad environmental components were considered to provide a context for understanding the potential effects of the Proposed Action and to provide a basis for assessing the significance of potential impacts. The environmental components considered are air quality, biological resources, cultural resources, health and safety , land use, noise, soi ls, socioeconomics, and water resources. Neither the effects of the Proposed Action nor the No Action Alternative are expected to be controversial, involve unique or unknown risks, or to establish a precedent for future actions. No significant negative effects to the environment are anticipated under either alternative.

Cumulative impacts of the Proposed Action to these environmental components were also analyzed. The Proposed Action promotes the development and maintenance of a healthy ecosystem suitable for multiple uses at Fort Campbell. However, implementing the INRMP is not expected to result in significant environmental improvements relative to the existing conditions. Therefore, the effects of the Proposed Action are not considered significant as defined by the NEPA implementing regulations (40 CFR 1508.27 and 32 CFR 651).

Public and Intergovernmental Review

The PEA was released for a 30 day public review period beginning 10 June 2020. The PEA and related documents were posted to the Fort Campbell public webpage and on the FC Facebook page. A notice of availability including a request for comments on the draft PEA was published in newspapers serving the Fort Campbell area. Comments were accepted through July 10, 2020 via mail and email. During that time one request for a physical copy of the PEA and INRMP was received and mailed to a private citizen. No public comments were received.

Agency review comments were received from the Tennessee Department of Environment and Conservation (TDEC). TDEC indicated that the PEA adequately addresses potential impacts and requests additional environmental coordination with applicable environmental programs when specific projects are designed. Review comments were also received from the Kentucky Department for Environmental Protection reflecting several environmental media and also requesting follow-on coordination for specific projects where applicable.

Conclusion

Based on the analysis presented in the PEA, I find that implementation of the proposed action, in conjunction with the implementation of specified mitigation measures, would have no significant negative impact on the human or natural environment. Therefore, a Finding of No Significant Impact is issued for the proposed action and no Environmental Impact Statement is required.

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1.0 INTRODUCTION

This Programmatic Environmental Assessment (PEA) has been prepared to address effects of implementing the Fort Campbell Integrated Natural Resources Management Plan 2020-2025 (INRMP) and all associated plans and actions. The INRMP is a five year planning document that is the primary mechanism for integrating natural resources management with the Fort Campbell military mission. The INRMP establishes goals, objectives, and standard procedures for managing natural resources on the installation.

The objective of this PEA is to inform decision makers and the public of the likely consequences of the proposed action and alternatives. If impacts of the proposed action are found to be insignificant, a Finding of No Significant Impact (FNSI) will be prepared and the selected alternative will be implemented. If the environmental impacts of the proposed action are found to be significant according to Council on Environmental Quality criteria (40 CFR 1508.27), a Notice of Intent will be published and an Environmental Impact Statement will be prepared.

This PEA has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA; Title 42 of the United States Code [U.S.C.] 4321-4347); the Council on Environmental Quality "Regulations for Implementing the Procedural Provisions of NEPA," 40 Code of Federal Regulations (CFR), Parts 1500 through 1508; and 32 CFR Part 651 "Environmental Analysis of Army Actions."

Fort Campbell is a military reservation located on approximately 105,000 acres in Tennessee and Kentucky. It is home to the 101st Airborne Division (Air Assault) and contains the combined headquarters of the 101st Airborne Division (Air Assault) and installation staff, as well as several tenant units. The mission of the 101st Airborne Division (Air Assault) is to train to maintain combat readiness needed to deploy rapidly anywhere in the world, to fight and win, and to sustain combat operations. The 101st Airborne Division (Air Assault) has a major role in current conflicts in Afghanistan, Iraq, and elsewhere in the world. Training and supporting troops for those conflicts is of primary importance to the nation's security and foreign policy.

The undeveloped maneuver space of Fort Campbell provides realistic terrain on which the 101st Airborne Division and tenant units train to combat proficiency in mounted, dismounted, and airborne mission activities. The mix of forested and open areas is favorable for light infantry maneuvers. Additionally, the maneuver space provides a large expanse of habitat for wildlife and plants, including some rare, threatened, or endangered species. The maneuver space includes some sensitive habitat types, such as karst and wetlands. The U.S. Army is dedicated to stewardship of natural resources on Army lands to comply with federal laws, provide for multiple land uses (e.g., outdoor recreation) and conserve natural ecosystems. The Environmental Division, Conservation Branch is tasked with management of natural resources to support the military mission, sustain a healthy ecosystem, and provide for multiple use of the land. The INRMP is the mechanism for planning, organizing, and evaluating natural resources management on the installation.

1.1 Purpose and Need for the Proposed Action

The INRMP describes natural resources management activities between the years 2020 and 2025 and provides a foundation from which to build the program beyond the year 2025. Implementation of the INRMP is needed to comply with federal law and DoD guidance, and to coordinate natural resources management efforts among the responsible parties. Implementation of the INRMP supports the military mission by ensuring regulatory compliance and integrating requirements for training land use into natural resources management goals.

Development of an INRMP is mandated by the Natural Resources Management on Military Lands Act of 1960 (Title 16 U.S.C., Section 670a and following), commonly known as the Sikes Act (as amended according to the Sikes Act Improvement Act [SAIA] of 1997 and Public Law 108-136, the National Defense Authorization Act of 2004). Preparation of the INRMP is also guided by DODI 4715.3, AR 200-1, and the Army Memorandum (21 March 1997) *Army Goals and Implementing Guidance for Natural Resources Planning Level Surveys (PLS) and Integrated Natural Resources Management Plans (INRMP)*, as described in Section 1.3.2 of the INRMP.

As a planning document, the INRMP establishes the ecosystem management approach that is outlined in DODI 4715.3 and AR 200-1. The ecosystem management approach is focused on sustaining healthy ecosystem processes rather than managing for a single species. A successful ecosystem management approach requires integration of management efforts for all resources. Additionally, part of the ecosystem management approach is the concept of adaptive management. Adaptive management has been incorporated into the INRMP to monitor resources and to adjust the management objectives based upon the effects of management activities. Monitoring programs in the INRMP indicate whether management measures and strategies are effective in achieving intended goals and objectives.

The INRMP is the mechanism for coordinating natural resources management activities within the Conservation Branch. The INRMP integrates several component management plans, such as the forest, endangered species, and watershed management plans (see INRMP Section 1.1 for a complete list). The INRMP provides management principles and goals that unite efforts of the Conservation Branch and helps to avoid duplication or conflicts of management efforts.

The INRMP is also the primary mechanism for coordinating natural resources management activities conducted by the Conservation Branch with those conducted by the Directorate of Plans, Training, Mobilization, and Security (DPTMS) Range Division and military units. Range Division and the Conservation Branch have responsibilities for monitoring and managing soil, vegetation, and open areas on Fort Campbell. The INRMP integrates these efforts, promotes coordination between the organizations, and avoids duplication or conflicts of activities. Army Regulation 350-4 Integrated Training Area Management (ITAM) requires that the ITAM program be included in the INRMP to ensure the plan reflects mission requirements for ranges and training areas.

The INRMP is the mechanism for coordinating natural resources management efforts on Fort Campbell with the U.S. Fish and Wildlife Service (USFWS), the Tennessee Wildlife Resources Agency (TWRA) and the Kentucky Department of Fish and Wildlife Resources (KDFWR), which is mandated by the Sikes Act. These agencies are involved in the preparation and update of the INRMP. Cooperative planning allows Fort Campbell to draw on data and expertise of those agencies, facilitates natural resources management on an

ecosystem scale, and pro-actively addresses regulatory issues, such as management of endangered species.

1.2 Scope

This PEA is a programmatic document that evaluates effects of implementing the Fort Campbell INRMP 2020-2025. The INRMP is a 5-year planning document containing goals, objectives, and management actions that are in the preliminary planning and budgeting phase. In many instances, projects forecast in the INRMP have not been planned in detail. Implementation of individual projects is contingent upon funding allocations in each fiscal year. Therefore, because details of specific projects are not yet known, this PEA does not address effects of individual projects (e.g., clearing woody vegetation from a particular open area). Rather, this PEA addresses the effect of establishing and implementing natural resources management objectives that are integrated with other Fort Campbell activities (e.g., military training) and generalized resource impacts from the implementation of actions supporting those goals and objectives. When individual projects have been planned in sufficient detail, a project-specific analysis of effects shall be completed to fully comply with the NEPA and 32 CFR 651. NEPA documentation will be developed following the Fort Campbell Sustainable Installation Management System (SIMS) NEPA procedure prior to initiating any action that may impact the human and natural environment.

This PEA addresses effects likely to occur within the boundaries of Fort Campbell. Management activities described in the INRMP are focused primarily on the maneuver space (INRMP Section 1.2).

This PEA evaluates effects of the Proposed Action (implementing the INRMP), No Action Alternative (managing natural resources without the INRMP), and No Management Alternative (no management of natural resources) to the human environment, including the installation military mission.

1.3 Agency and Public Involvement

The NEPA process is designed to involve the public in federal decision-making. Public involvement and intergovernmental coordination and consultation are recognized as essential elements in the development of a PEA. Fort Campbell will coordinate with federal and state governments, as well as the public, during the EA process.

A copy of this PEA will be made available for review on the Fort Campbell Environmental Division webpage. Public comment will be invited for a period of thirty days following publication of a Notice of 30-Day Period for Public Comment in the Leaf Chronicle (Clarksville, Tennessee), Fort Campbell Courier (Fort Campbell, Kentucky), Cadiz Record (Trigg County, Kentucky), Stewart County Standard (Stewart County, Tennessee), and the Kentucky New Era (Hopkinsville, Kentucky.

1.4 Decision to Be Made

The decision maker is the Garrison Commander of Fort Campbell, Kentucky. The decision the Garrison Commander will make is whether to fully implement the INRMP 2020-2025, or to implement alternative course of actions (managing natural resources at Fort Campbell without an INRMP or no management at all).

The INRMP 2020-2025 integrates natural resources management activities that are currently being implemented under ongoing component management plans. Because those management plans will be implemented under both the Proposed Action and the No Action Alternative, the fact that those activities are in progress should not influence selection of one alternative over the other. The INRMP 2020-2025 has not been authorized and funding has not been secured to implement projects unique to the INRMP. Therefore, there has been no commitment of resources that would prejudice the selection of either alternative addressed herein.

2.0 DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action is to implement the Fort Campbell INRMP 2020-2025. The INRMP provides a comprehensive list of resource goals, objectives, management actions, and monitoring activities that are planned for implementation between fiscal years 2020 and 2025, inclusive. Section 5.0 of the INRMP describes the goals and objectives set to guide installation natural resource management and planning using an ecosystem-based approach that supports the military mission. Section 7.0 of the INRMP lists conservation standards that are designed to minimize adverse effects to natural resources and are required for all training and non-training activities on Fort Campbell. The INRMP integrates the goals, objectives, actions, and conservation standards of several component documents (See INRMP Section 1.1 for a complete list). While many of the objectives, actions, and conservation standards originate in component management plans, some are unique to the INRMP. Objectives, actions, and conservation standards that are unique to the INRMP would only be implemented if the INRMP is fully implemented.

In addition to listing planned management activities, the INRMP provides detailed descriptions of the current state of natural resources on Fort Campbell (INRMP Section 2.0). The INRMP also defines the roles, responsibilities, and interactions of natural resources management programs within the Conservation Branch, Range Division, ITAM program, and the interaction of those programs with the military mission (INRMP Section 3.0).

The INRMP provides a mechanism for adapting the 5-year management plan in accordance with changed circumstances and new information/data. Section 1.8 of the INRMP describes the role of adaptive management in the INRMP. The INRMP is reviewed annually and may be adjusted to ensure objectives are realistic, fine-tune projects to improve achievement of goals, meet budget appropriations, or accommodate new land use requirements for training.

The Proposed Action is to fully implement resource management actions supporting resource specific goals and objectives as well as actions included within component plans of the INRMP. However, execution of actions is contingent upon receipt of adequate funds. While Fort Campbell will attempt to implement all projects planned for each fiscal year, only a portion of planned projects may be executed depending upon the appropriation for that fiscal year. Sections 6.0 of the INRMP address project prioritization and INRMP implementation. Because this assessment is programmatic, the effects analysis is largely qualitative. Provided the INRMP is fully implemented according to the definition of DODI 4715.3, the conclusions of this assessment are valid even if 100 percent of planned projects are not implemented in a given fiscal year.

Prior to preparation of the INRMP 2020-2025, Fort Campbell prepared an INRMP for the period 2014 through 2019 (Fort Campbell 2015), an INRMP for 2008 through 2012, and INRMP updates from the

original installation INRMP from 1999 in 2001 (Fort Campbell 2001) and 2003 (Fort Campbell 2003). The INRMP 2020-2025 has been substantially updated from previous versions. Many of the projects listed in previous versions of the INRMP are complete and therefore are not part of the Proposed Action. In some cases, ongoing actions have been revised in accordance with new data, mission requirements, or management objectives.

3.0 ALTERNATIVES

3.1 No Action Alternative

Under the No Action Alternative, natural resources on Fort Campbell would be managed without implementing the INRMP 2020-2025. Natural resources would be managed according to existing valid component plans (Table 1), applicable federal and state laws, and DoD guidance (e.g., CAM Reg 385-5). Implementation of these plans and policies would take place without integration between component plans, and without overall coordination of natural resources management with the military mission.

Table 1. Existing valid component plans for natural resources management on Fort Campbell.

Title	Effective Date
Endangered Species Management Component	2017
Bald Eagle Management Plan	2018
Forest Management Plan	2015
Integrated Wildland Fire Management Plan	2017
Fish and Wildlife Management Plan	2017
Integrated Pest Management Plan	2017
Agricultural Outlease Tract Management Plans	various
Grassland Management Plan	2017
Watershed Management Plan	2017
ITAM 5-year Plan	2019
Migratory Bird Management Strategy	2018
Fort Campbell Stormwater Management Plan	2016

In the absence of an INRMP assessed herein, there are no component plans specifically designed to manage wetlands, rare plants, game and non-game fish and wildlife, riparian zones, outdoor recreation, wildfire, or prescribed fire.

3.2 No Management Alternative

Under the No Management Alternative, the INRMP 2020-2025 would not be implemented and no management of natural resources would take place on Fort Campbell. The No Management Alternative would result in non-compliance with the Sikes Act, Endangered Species Act, Clean Water Act, Migratory Bird Treaty Act, DoDI 4715.3, and AR 200-1. Lack of management of wetlands and soil erosion also may

result in violation of the Clean Water Act and state water quality regulations. The No Management Alternative conflicts with Fort Campbell's military mission because without active management (e.g., mowing, cultivation, prescribed burning) open areas (agricultural fields, drop zones) in the maneuver space would become unsuitable for training. The No Management Alternative is not feasible because it is likely to result in significant violation of federal and state regulations and does not support the military mission. Therefore, the No Management Alternative is dismissed from further consideration and is not carried forward through detailed analysis in this EA.

4.0 EXISTING ENVIRONMENT

Section 2.0 of the INRMP provides a detailed description of existing environmental conditions on Fort Campbell. That information is incorporated by reference and information relevant to the effects analysis is summarized below. Where appropriate, the discussion below refers to figures found in the INRMP. This section also describes the approach to management of each resource, including the primary programs responsible for management, and component plans used to guide management of each resource.

4.1 Environmental Setting

Fort Campbell is located in southwestern Kentucky and northwestern Tennessee, within portions of four counties: Christian and Trigg counties in Kentucky, and Montgomery and Stewart counties in Tennessee. Fort Campbell lies within the Western Highland Rim physiographic province, which forms a transition area between Kentucky farmlands to the north, the steeply dissected and wooded rim of the Cumberland River to the south and west, and gently rolling hills of low to moderate relief to the east.

4.2 Land Use

Fort Campbell covers approximately 105,000 acres. The installation consists of training and maneuver areas (approximately 68,000 acres), range and impact areas (approximately 27,000 acres), and built-up areas (INRMP Figure 2). A detailed description of land use on Fort Campbell is provided in Section 2.0 of the INRMP. The majority of natural resources management activities on Fort Campbell occur in the maneuver space, which includes the entire installation except the 14,000-acre cantonment area.

The maneuver space contains the Impact Area (22,144 acres) and Small Arms Impact Area (4,494 acres). While wildlife and natural habitat exist, and wildfires occur, within the impact areas, they are off-limits to natural resources personnel due to hazards associated with unexploded ordnance. Management activities and objectives described in the INRMP do not involve the impact areas. Wildfires that occur in the impact areas may be allowed to burn or may be suppressed by the Forestry wildland firefighters.

Land in the maneuver space is used for training activities conducted on Fort Campbell. It also provides habitat for fish and wildlife, space for agricultural and timber production, and opportunities for outdoor recreation. In accordance with the Sikes Act, the maneuver space is managed for multiple use to the extent practicable consistent with the military mission.

Coordinated planning among military trainers and natural resources personnel is essential to ensure appropriate space and conditions for training, maintaining regulatory compliance, implementing productive reimbursable programs (e.g., agricultural leases), and sustaining a healthy ecosystem. The ITAM Program

and the Conservation Branch are responsible for developing and maintaining conditions in the maneuver space that support the military mission and other uses.

The Range Development Plan (RDP)(Nakata 2004) describes conditions of the maneuver space required to support necessary training, including the number and size of ranges, and the amount and characteristics of open area required for mounted and aerial training activities. Numerous other natural resources component plans guide management of the maneuver space, including the Forest and Open Area management plans. The role of component plans is described below in sections that address individual resources. The INRMP serves to integrate actions supporting the RDP and multiple component plans, with the result of providing clear comprehensive guidance for maneuver space land management.

4.3 Natural Resources

About 87 percent of the installation is undeveloped maneuver space. In the maneuver space, forests, streams, fields, and other natural settings are maintained to provide a realistic context for training activities. The maneuver space also contains substantial habitat for fish and wildlife, sensitive natural communities, and area for outdoor recreation. Natural resources found in the maneuver space are briefly described below. A detailed description of existing conditions is provided in Section 2.0 of the INRMP.

4.3.1 Soils

Twenty-three soil mapping units occur on Fort Campbell (INRMP Figure 6). Soil types are primarily silt loam, with some types containing clay or gravel. Characteristics of soil types are described in Table 2 of the INRMP. Control of soil erosion is a challenge at Fort Campbell. Three soil types that cover 52 percent of the total installation acreage are highly erodible. A large proportion of the maneuver space is located on highly erodible soils. Activities that disturb soil (e.g., excavation, use of tracked vehicles, cultivation, establishment of firebreaks) potentially result in substantial soil erosion without proper control and restoration efforts.

Three of the soil types on Fort Campbell are hydric or contain hydric inclusions and may be associated with wetlands. Wetlands are addressed in Section 4.3.2 below. Fifteen of the soils on Fort Campbell are classified by the Natural Resources Conservation Service as prime farmland. Prime farmland soils cover approximately 60 percent of the installation and underlie numerous land uses including impact areas, ranges, drop zones, training areas, agricultural fields, native grasslands, and forests.

4.3.2 Water Resources and Aquatic Habitat

The major uses of Fort Campbell's water resources are water supply, recreation, training, and aquatic habitat. Protecting the quality of ground and surface water is of primary importance in maintaining a healthy human environment and a self-sustaining ecosystem.

Two aquifers are present under the installation. One is a shallow aquifer that is recharged by sinkholes in the area. A second, deeper aquifer is associated with Boiling, Quarles, and Blue springs (INRMP Figures 5 and 10). The abundant karst formations on Fort Campbell form direct links between the ground surface and groundwater. Quality of ground water on Fort Campbell is protected through the establishment of 100-foot wide vegetated buffers around karst features.

Surface water systems on Fort Campbell include approximately 700 watercourses totaling about 453 stream miles (INRMP Figure 10; BHE 2004). Approximately 160 miles of streams are within impact areas, and 293 miles are outside impact areas. The installation waterways are divided into nine subwatersheds (INRMP Table 3; Figure 9).

According to monitoring reports from the states of Tennessee and Kentucky, five streams on the installation are classified as impaired for one or more designated uses (INRMP Table 3). Fort Campbell monitors water quality to assess baseline conditions of streams, and to detect point/non-point source discharges into streams. Surveys for aquatic macroinvertebrates also are conducted to assess the relative condition of aquatic communities. As part of Fort Campbell's Watershed Management Plan, selected subwatersheds are surveyed to monitor habitat conditions and water quality. Details of the water quality assessment methods and findings are presented in Section 2.7 of the INRMP.

Three man-made impoundments lie within the installation boundaries: Lake Kyle, Joe Swing Quarry, and an unnamed lake, that are used for recreational purposes. A detailed description of these surface water resources can be found in Section 2.7 of the INRMP.

From 1999 through 2009, Fort Campbell coordinated with the Natural Resources Conservation Service (NRCS) and the United States Army Corps of Engineers to conduct wetland delineations throughout the installation. The locations of potential wetlands were mapped using digital photographs, NRCS soil maps, and National Wetland Inventory (NWI) maps. Each potential wetland area was delineated using the "Routine Onsite Determination Method" described in the U. S. Army Corps of Engineers' *Wetlands Delineation Manual* (USACE 1987). All potential wetlands thought to be "jurisdictional" were submitted for a jurisdictional determination by the USACE, Nashville District. A total of 617 wetlands meeting jurisdictional requirements totaling 2,533 acres have been identified on Fort Campbell. All identified wetlands were mapped using Global Positioning System (GPS) technology, and the location of the wetland boundaries are maintained in a GIS database. Most wetlands on Fort Campbell are palustrine types (US Infrastructure 2000).

4.3.3 Terrestrial Habitat

Terrestrial habitats are classified by their plant communities and include native grassland barrens, old fields, agricultural fields, and forest. Results of floral surveys conducted on Fort Campbell are provided in Appendix D of the INRMP. Originally the terrestrial habitats present on Fort Campbell consisted of native prairie and woodlands. The land was cleared in the mid-1800's for agriculture but has since been allowed to convert back to hardwood forest through natural succession. Loblolly pines also have been planted. Currently, 91,794 acres of undeveloped land on Fort Campbell are composed of several terrestrial habitat types. Of the undeveloped areas, approximately 19,000 acres are open area, with 6,000 acres in agricultural leases and 13,000 acres managed as native grass barrens or old fields (INRMP Figure 11). Approximately 36,600 acres are hardwood timber and 11,600 acres are pine plantations, for a total of 48,200 acres of forest. Brief descriptions of these habitat types are provided below and detailed information is provided in Section 2.0 and Appendix H of the INRMP.

Native grassland barrens and old fields are the non-forested, non-developed areas that are not currently under agricultural lease and not classified as wetlands. Together these two habitat types are referred to as

open areas. Native grassland barrens are a unique ecological community. The habitat type was historically more extensive in the region. Currently the native grassland barrens on Fort Campbell are some of the largest remaining remnants of this habitat. Native grassland barrens are characterized by endemic grasses and shrubs, including some rare species, and many species that are fire-adapted. Native grasslands are a high priority for protection by state and federal agencies as natural areas (Shea 2005). Old fields are open areas that do not contain plant species associated with native grassland barrens. In old fields, herbaceous plants and grasses are the dominant vegetation types, with some woody shrubs and trees present. Both native grassland barrens and old fields provide important areas for training activities. Fort Campbell has developed the Grassland Management Plan to guide the maintenance of open areas on the installation.

Approximately 6,000 acres on Fort Campbell are managed by the Agricultural Outlease (AO) Program, of which approximately 4,400 acres of agricultural fields leased to farmers in the local community. The AO Program is a reimbursable program that provides funds for land management. Crops grown on the installation include hay, wheat, corn, grain sorghum, and soybeans. The AO Program manages leases, develops Tract Management Plans for each field, and coordinates with mission planners to facilitate military training in and around agricultural fields.

About 48,200 acres of woodlands make up approximately 46 percent of the total area of the installation. Woodlands are predominately deciduous hardwoods but also contain mixed mesophytic forests and pine plantations (INRMP Figure 12). Dominant forest types include upland and bottomland hardwood, which are described in the Fort Campbell Forest Management Plan (FMP) and summarized in Section 2.0 and Appendix K of the INRMP. Forest on Fort Campbell is managed to provide realistic conditions for training exercises, timber and other forest products, and habitat for wildlife including endangered species.

Riparian areas are terrestrial habitats that occur along streams. Riparian areas serve an important function in maintaining the water quality of streams by reducing input of sediment, nutrients, and contaminants into surface water. Fort Campbell protects riparian areas and stream water quality by establishing vegetated buffers along streams; buffers are 100 feet wide along perennial streams and 50 feet wide along intermittent streams. Within vegetated buffers, training and non-training activities that may impact water quality (e.g., excavation) are limited. Approximately 2,897 acres of riparian areas exist on Fort Campbell. Additional information about riparian areas is provided in Section 2.0 of the INRMP.

Part of terrestrial habitat management is control of noxious and invasive plant species. Sixty seven plants on Fort Campbell are classified as exotic invasive species (INRMP Table 6). Executive Order 13112 requires coordination and enhancement of Federal activities to control and minimize the economic, ecological, and human health impacts caused by invasive species. Department of the Army Memo “Army Policy Guidance for Management and Control of Invasive Species” (26 June 2001) provides guidance on implementing the Executive Order. The Fort Campbell Integrated Pest Management Plan (IPMP) directs the management of noxious and invasive plants. Additional information about noxious and invasive species is provided in Section 2.0 of the INRMP.

4.3.4 Fauna

The mixture of natural habitat types on Fort Campbell supports a diverse group of game and non-game wildlife and fish. Fort Campbell has conducted surveys to identify the presence of mammals, birds, fish, amphibians, reptiles, and insects on the installation (INRMP Appendix D). Detailed information about

wildlife and fish on Fort Campbell is provided in Section 2.0 of the INRMP. Most wildlife and fish species on the installation are locally common and are not provided protection under federal or state laws, except those state laws governing wildlife collection and hunting. The exceptions are migratory birds and species that are federally listed as threatened or endangered. Because natural resources management at Fort Campbell is based upon an ecosystem approach, there generally are no species-specific management activities except as required by law. Fort Campbell monitors certain game and non-game species to identify population trends as part of evaluation of overall ecosystem health.

Nearly 200 species of birds have been recorded on Fort Campbell. The installation supports diverse groups of songbirds, game birds, waterfowl, wading birds, and raptors. Several of the bird species that are found on the installation are listed as endangered, threatened, special concern, imperiled, declining, or in need of management by the Kentucky State Nature Preserves Commission (KSNPC) Natural Heritage Program and/or the TDEC Division of Natural Heritage. In 2005, Fort Campbell developed the *Migratory Bird Management Strategy: a conservation strategy for protecting and managing migratory birds on Fort Campbell, Kentucky* (MBMS). Fort Campbell annually conducts point count surveys to comply with Executive Order 13186 by evaluating trends in the diversity of migratory songbirds.

In addition to promoting sustainable populations of game and non-game fish and wildlife, Fort Campbell controls certain species of animal pests such as mice, groundhogs, pigeons, and feral hogs. The IPMP guides management of pest species. Additional information about pest management on Fort Campbell is provided in Section 2.0 and Appendix P of the INRMP.

4.3.5 Rare, Threatened, and Endangered Species

Rare species are animals and plants listed by the states of Kentucky or Tennessee as threatened, endangered, in need of management, imperiled, special concern, or declining. Rare species are state-listed species that are not also federally listed. Sixty species of wildlife and 20 species of plants found on Fort Campbell are state-listed but not federally listed (INRMP Tables 4 and 5; Figure 13). For species considered rare by the state of Kentucky or Tennessee, Fort Campbell does not manage at the species level, but rather at the ecosystem level. Management goals are established to sustain a variety of natural habitat types likely to support a diverse group of species, including rare species. Fort Campbell attempts to minimize impacts to rare plants to the maximum extent practicable by recording locations in the GIS database, planning habitat management activities (e.g., prescribed burns, mowing) to avoid damage to plants, and communicating with mission planners on ways to avoid rare plants during training exercises.

Threatened and endangered species are those listed by the USFWS under the Endangered Species Act. Two federally endangered species, the gray bat (*Myotis grisescens*) and the Indiana bat (*M. sodalis*), and one federally threatened species, Northern long-eared bat *M. septentrionalis*), occur on Fort Campbell. No designated Critical Habitat for any one of these federally listed species exists on Fort Campbell. Three species proposed for federal listing, little brown bat (*M. lucifugus*), tri-colored bat (*Peromyotis subflavus*), and Monarch butterfly *(Danaus plexippus),* occur on Fort Campbell. The Endangered Species Act of 1973 as amended (U.S.C. 1531 et seq.) provides legal protection for federally listed species. Because of their protected status, Fort Campbell has established specific monitoring and management activities for the gray, Indiana, and Northern long-eared bats. In accordance with the Endangered Species Act (ESA) and AR 200-1, Fort Campbell has developed an Endangered Species Management Component (ESMC) that includes detailed information for each species about natural history, presence on Fort Campbell, and

management activities implemented on the installation. Section 2.0 of the INRMP also provides detailed descriptions of each species.

4.4 Cultural Resources

Cultural resources found on Fort Campbell include archaeological artifacts, cultural items, historic properties, and historic districts. Cultural resources at Fort Campbell date from the Paleoindian Period (ca. 10,000 B.C.) to the 20th century. To date, 1,424 archaeological sites have been recorded within the installation. Of the known archaeological sites or components, 17 sites are considered eligible and 293 sites are considered potentially eligible for inclusion on the National Register of Historic Places (NRHP). Work is ongoing to identify additional sites and evaluate eligibility for the NRHP of known archaeological sites and historic structures, objects, and districts.

Protection of cultural resources on the installation is required under the National Historic Preservation Act (NHPA), the Antiquities Act, Archaeological Resources Protection Act (ARPA), the Native American Graves Protection and Repatriation Act (NAGPRA), and AR 200-1. Fort Campbell has established a Programmatic Agreement with the Kentucky and Tennessee State Historic Preservation Offices and the Advisory Council on Historic Preservation. The Programmatic Agreement establishes measures for preservation of historic and archaeological resources on Fort Campbell. Section 10.0 of the INRMP addresses protection of cultural resources during natural resources management activities. Natural resources management specialists maintain awareness of cultural resources sites via a GIS system, which includes locations of known artifacts, sites, and historic structures. The INRMP also addresses procedures for identifying and reporting newly discovered sites.

4.5 Air Quality

The Clean Air Act (CAA) requires that the U.S. Environmental Protection Agency (USEPA) establish National Ambient Air Quality Standards (NAAQS) that are benchmarks for the establishment of air emission limitations for pollutants that may be harmful to public health or the environment The USEPA has established two classes of NAAQS: (1) primary standards, which protect public health including the most sensitive of populations, and (2) secondary standards, which protect public welfare. USEPA has defined NAAQS for seven criteria pollutants: carbon monoxide (CO); lead (Pb); nitrogen dioxide (NO_2); ozone; fine particulate matter with an aerodynamic diameter less than or equal to 10 microns (PM_{10}) and 2.5 microns ($PM_{2.5}$); and sulfur dioxide (SO2) (Table 2; USEPA 2004a).

Table 2. Federal National Ambient Air Quality Standards (USEPA 2004a).

Criteria Air Pollutant	Averaging Time	Primary NAAQS	Secondary NAAQS
CO	8-hour maximum 1-hour maximum	9 ppm (10 mg/m^3) 35 ppm (40 mg/m^3)	None None
Pb	Maximum quarterly arithmetic mean	1.5 µg/m^3	Same as primary
NO_2	Annual arithmetic mean	0.05 ppm (100 µg/m^3)	Same as primary
Ozone	1-hour average 8-hour average	0.12 ppm (235 µg/m^3) 0.08 ppm (157 µg/m^3)	Same as primary Same as primary

$PM_{2.5}$	Annual arithmetic mean 3-year average 24-hour average, 98th percentile	15 µg/m³ 65 µg/m³	Same as primary Same as primary
PM_{10}	Annual arithmetic mean 24-hour average	50 µg/m³ 150 µg/m³	Same as primary Same as primary
SO_2	Annual arithmetic mean 24-hour maximum 3-hour maximum	0.03 ppm (80 µg/m³) 0.14 ppm (365 µg/m³) N/A	None None 0.50 ppm (1,300 µg/m³)

CO – Carbon monoxide; Pb – Lead; NO_2 – Nitrogen dioxide
$PM_{2.5}$ – particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers
PM_{10} – particulate matter with an aerodynamic diameter less than or equal to 10 micrometers
SO_2 – Sulfur dioxide
The USEPA has divided the United States into Air Quality Control Regions (ACQR) to evaluate NAAQS compliance. An ACQR is considered in "attainment" for a specific pollutant when the area meets the primary or secondary NAAQS criteria and in "nonattainment" for a pollutant when it does not meet the primary or secondary criteria. Within Kentucky, the Kentucky Department for Environmental Protection (KDEP), Division for Air Quality administers the CAA on behalf of the USEPA. The portion of Fort Campbell in Kentucky is located within the Paducah-Cairo Interstate AQCR (KDEP 2004). Within Tennessee, the Tennessee Department of Environment and Conservation (TDEC), Division of Air Pollution administers the CAA. The portion of Fort Campbell in Tennessee is located within the Middle Tennessee Intrastate AQCR (Stewart, pers. comm.).

Fort Campbell is located in counties that are currently in attainment for CO, Pb, NO_2, PM_{10}, $PM_{2.5}$, and SO_2 (USEPA 2004b). Christian County, Kentucky and Montgomery County, Tennessee are located in the Clarksville-Hopkinsville Metropolitan Service Area (MSA) that was designated as a nonattainment area for 8-hour ozone (Brewer, pers. comm.; Stewart, pers. comm.; USEPA 2004b). In 2005, the two counties requested re-designation as attainment areas. In November 2005, Montgomery County was re-designated as an attainment area for all NAAQS; however, Montgomery County will be identified as a maintenance area for the next 12 years. Maintenance plan requirements for Montgomery County are designed to maintain average ozone concentrations at or below the maximum allowed concentration. Christian County, Kentucky has been redesignated as a maintenance area (CH2MHill 2005). Both Trigg County, Kentucky and Stewart County, Tennessee are in attainment for NAAQS.

Under the federal Title V program, Fort Campbell is considered a major source of NO_2, SO_x (sulfur oxides), CO, and VOC (volatile organic compounds) in the region. Fort Campbell is also a major source for hazardous air pollutants (HAP) due to the cumulative total of emissions from portions of the installation located in Kentucky and Tennessee. Fort Campbell has Title V air permits from both KDEP and TDEC for installation point sources of emissions, which includes paint spray booths, woodworking shops, hot water heaters, fossil fuel boilers, incinerators, and underground and above ground storage tanks (DPW 2003). Primary nonpoint sources of air pollution on the installation are military equipment and vehicles (DPW 2003).

4.6 Noise

The Federal Government has established noise guidelines and regulations to protect citizens from potential hearing damage and other adverse physiological, psychological, and social effects associated with noise. The Noise Control Act of 1972 (Public Law 92-574) directs federal agencies to comply with applicable federal, state, interstate, and local noise control regulations.

The Army manages the potential for noise impact on adjacent communities through the Environmental Noise Management Program (ENMP), which incorporates and replaced the Installation Compatible Use Zone (ICUZ) Program described in Chapter 14 of AR 200-1. The goals of the ENMP are to: 1) control environmental noise in order to protect the health and welfare of people on- and off-post impacted by Army-produced noise; and 2) reduce community annoyance from environmental noise to the extent feasible while remaining consistent with mission activities.

Fort Campbell has developed the Installation Environmental Noise Management Plan (IENMP; USACHPM 2000) that provides a strategy for noise management at the installation. The IENMP includes recommendations regarding education, complaint management, noise and vibration mitigation, and noise abatement procedures.

Training activities are the primary sources of noise at Fort Campbell and include fixed- and rotary-wing aircraft operations, small arms and heavy weapons firing, detonating explosives, and artillery and armor (DPW 2003). Other, less intense, sources of noise include military and civilian vehicles.

4.7 Facilities

Transportation facilities on Fort Campbell (roads, airfields, railroad) are described in Section 2.5 of the INRMP. Utilities including potable water, waste water, electricity, natural gas, and solid waste and storm water management systems are described in Section 2.5 of the INRMP. Natural resources management activities generally do not affect transportation systems or utilities on Fort Campbell. Maintenance of vegetation along roads and around facilities in the maneuver space is handled by the Maintenance Division of the Directorate of Public Works. While storm water management involves aspects of soil erosion control and quality of surface and ground water, natural resources management does not affect the systems (e.g., basins, drains) established to manage storm water flow. Because neither the Proposed Action nor the No Action Alternative is expected to beneficially or adversely affect facilities or utility systems on Fort Campbell, effects to those facilities and systems are not addressed in detail herein.

4.8 Socioeconomics

The socioeconomic environment of Fort Campbell is characterized by demographics, economic development, public services (police, fire) and public outdoor recreation. The majority of factors influencing the socioeconomic environment are based within the Fort Campbell cantonment area, which is outside the scope of this assessment. Those factors are addressed only briefly here.

Fort Campbell supports the third largest military population in the Army and the seventh largest in the DoD. The Army Stationing and Installation Plan for the fiscal year of 2005 established the base population at

29,321 active duty military personnel, 2,934 civilian personnel and 4,983 other personnel on Fort Campbell. Approximately 40,000 family members live on Fort Campbell and 112,000 retirees and their dependents live in surrounding communities. Army Reserve and National Guard also work on the installation, and number approximately 18,000 individuals.

There are about 4,200 housing units on the installation for officers, enlisted soldiers and their families. Installation facilities include seven schools operated by the DoD, a major hospital, child care facilities, numerous chapels, banks, restaurants, post exchanges, service stations, campgrounds, and five swimming pools (CH2MHill 2005).

Clarksville, located east of Fort Campbell in Montgomery County, Tennessee, has a metropolitan area population of slightly over 150,000 people (U.S. Census Bureau 2018). Hopkinsville, Kentucky, located 17 miles northeast of Fort Campbell in Christian County, has a population of approximately 33,000 people (U.S. Census Bureau 2005). These two cities are the primary urban centers in the area. The nearest large city is Nashville, located 55 miles to the southeast. The economy of the general region is diversified, with major sectors being agriculture, manufacturing, government, retail, and wholesale (CH2MHill 2005). Fort Campbell is the largest employer in the four counties in which the installation occurs (CH2MHill 2005). Army operations at Fort Campbell generate substantial revenues to local economies as wage and salary payments to military and civilian employees, construction contractor payments, and operating costs such as rent and lease payments for equipment, utilities, telephone service, office supplies, and non-construction contracts. It is estimated that Fort Campbell contributes approximately $10 billion annually to the economy of the area (*Center for Economic Research in Tennessee*, February 2019). Because neither the Proposed Action nor the No Action Alternative will beneficially or adversely affect demographics or economics on Fort Campbell or the surrounding area, effects to those elements of socioeconomics are not addressed in detail herein.

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* (1994), requires federal agencies to achieve environmental justice "to the greatest extent practicable" by identifying and addressing "disproportionately high adverse human health or environmental effects of…activities on minority populations and low-income populations." Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risk (1997), requires that federal agencies identify and assess environmental health and safety risks that may disproportionately affect children. Neither the Proposed Action nor No Action Alternative will affect minority or low-income populations or children.

Security and police protection is provided by the Military Police. Gate security is provided through Military Police and DoD civilian law enforcement. Fire protection in the Fort Campbell cantonment area is provided by the Fort Campbell Fire Department. Management of wildland fires in the maneuver space is provided by Fort Campbell Forestry and DPTMS, with support from the Fort Campbell Fire Department, and this would remain the same under the proposed action and alternatives. Therefore, because neither the Proposed Action nor the No Action Alternative will affect public services, those services are not addressed in detail herein.

Recreational facilities such as gymnasiums, swimming pools, bowling alleys, movie theaters, and sports fields are provided by Fort Campbell in the cantonment area. Neither the Proposed Action nor the No Action Alternative will beneficially or adversely affect any public recreation facility or opportunity in the

cantonment area; those facilities are not addressed in detail here. This assessment addresses outdoor recreation in the maneuver space. The Sikes Act requires military installations to provide public outdoor recreation opportunities within the constraints of the military mission. Fort Campbell provides many opportunities for public outdoor recreation in the maneuver space including hunting, fishing, hiking, boating, kayaking, off road vehicle trails, and camping (INRMP Section 9.0). The Fish and Wildlife Program plans, coordinates, administers, and implements fish and wildlife management programs in accordance with AR 200-1; responsibilities include hunting and fishing management, habitat enhancement, setting hunting bag limits, and stocking fish. The Military Police and the USFWS enforce hunting and fishing regulations.

4.9 Hazardous and Toxic Materials

Hazardous and toxic materials commonly used at Fort Campbell include antifreeze; brake and deicing fluids; motor, hydraulic, and fuel oils; grease; diesel and aircraft fuels; motor gasoline (MOGAS); battery acid; kerosene; paint; and solvents (USGS 1996). Also incorporated into the hazardous waste stream are hospital wastes, lead-based paint, pesticides, herbicides, and unexploded ordnance. Hazardous waste is generated primarily by site operations and maintenance of aircraft, vehicles, buildings, and grounds. Hazardous and toxic materials are used and stored nearly exclusively in the cantonment area and airfields. Because the scope of this EA is limited to the maneuver space, hazardous materials used in the cantonment area are not addressed in detail. Hazardous materials used in the maneuver space are petroleum, oils, and lubricants (POL) associated with vehicles and equipment, gasoline in drip torches used to ignite prescribed burns, fertilizer used in agricultural fields, and pesticides used to control noxious weeds or undesirable woody plants.

To ensure proper handling of hazardous and toxic materials, and response to spills of those materials, Fort Campbell's Compliance Branch has established spill prevention and response instructions for all tenants and facilities on the installation. A spill response team is on call to assist the installation with a spill or release of hazardous substances. The Fort Campbell Environmental Handbook (https://home.army.mil/campbell/index.php?cID=875) provides guidance and instructions for spill prevention control, countermeasures, and site-specific contingency planning. Each tenant unit is required to maintain a site-specific spill prevention and control plan, and to train unit personnel in spill prevention and control. Spill control materials are required in motor pools, aircraft hangars, and on board all fuel-carrying vehicles. Programs for collection and safe disposal of antifreeze, petroleum, oil, and lubricants are in place to avoid improper disposal. Vehicles are washed at the central vehicle wash facility and at wash racks. These facilities are designed to capture mud, grease, and petroleum products washed off the vehicles, and prevent contamination of storm water collection system, surface water, and groundwater.

5.0 CONSEQUENCES OF THE PROPOSED ACTION AND ALTERNATIVE

This section describes the anticipated effects to the environment from the Proposed Action and the No Action Alternative. In addition to environmental consequences, implications to the military mission and regulatory compliance are described.

Under the Proposed Action and No Action Alternative, natural resources on Fort Campbell would be managed in a manner that would comply with federal and state laws governing specific resources (e.g., wetlands, streams). Natural resources management activities are designed, by definition, to benefit the environment and support natural ecological processes. Generally, natural resources management activities

do not involve activities that result in significant adverse environmental impacts, such as conversion of natural habitat to impervious surfaces (i.e., pavement, buildings), use of hazardous materials, or generation of pollutants or noise. No significant negative effects to the environment are anticipated under either alternative. The primary differences between the alternatives are:

- Unification of numerous programs and component management plans in the INRMP,
- Coordinated management of wildfires and prescribed burns,
- Integration of natural resources and fire management with the military mission, and
- Objectives, monitoring actions, and conservation standards unique to the INRMP (i.e., not found in other component management plans) that are designed to enhance management of natural resources on Fort Campbell.

The INRMP promotes a coordinated approach that improves the efficiency and effectiveness of individual management activities. Therefore, this analysis identifies the effects to the environment from implementation of multi-disciplinary, long-term plans (the INRMP and component plans) under the Proposed Action, versus uncoordinated implementation of several component plans under the No Action Alternative. The effects of individual actions described in the INRMP are not evaluated here but are generally assessed and will be evaluated during the Installation NEPA review process, if necessary, when the project is planned in sufficient detail.

Direct, indirect, and cumulative effects of the Proposed Action and the No Action Alternative were assessed. A direct impact is an effect to the environment caused by the action and occurring at the same time and place. An indirect impact is an effect to the environment caused by the action but distant in time or space. Indirect impacts include reasonably foreseeable land use changes that may occur in the vicinity as a result of implementing the project. A cumulative impact results from the incremental or collective impact to the environment by the action when combined with other past, present, and reasonably foreseeable future actions.

Neither the effects of the Proposed Action nor the No Action Alternative are expected to be controversial, involve unique or unknown risks, or to establish a precedent for future actions. Because the Proposed Action and the No Action Alternative do not involve park lands or wild and scenic rivers, effects to those resources are not analyzed in detail.

5.1 Irreversible or Irretrievable Commitment of Resources

The Proposed Action and No Action Alternative involve the implementation of management plans. The "action" in each of the alternatives is the establishment of a land management approach and the processes of planning, coordinating, monitoring, and budgeting for the projects listed in the management plans. The "action" in each of the alternatives does not include execution of the projects within the management plans, because project execution depends upon availability of funds and, in some instances, the outcome of other projects. As such, the irreversible or irretrievable commitment of resources under either alternative will be minimal. Because the INRMP and other component management plans are "living documents" designed to include adaptive management, none of the plans irretrievably commits natural resources or human resources to specific uses. Commitment of resources under both alternatives involves human and financial

resources, i.e., the time and salaries required to coordinate, implement, and monitor the respective management plan(s).

Selection of the Proposed Action will commit the time and salary required for the INRMP Coordinator to conduct the annual INRMP review described in Section 6.8 of the INRMP. The position of INRMP Coordinator will be filled by an existing member of the Conservation Branch staff; INRMP coordination tasks are expected to require no more than four person-weeks per year. Additionally, natural resources program managers will spend time preparing funding requests, coordinating with others, attending the Land Management Forum, and assisting the annual INRMP review.

Selection of the No Action Alternative will commit the time and salary of Conservation Branch and ITAM Program staff responsible for implementation of component management plans. The existing staff will accommodate the time and salary requirements of the No Action Alternative.

5.2 Compliance with Pertinent Regulations and Guidance

5.2.1 Proposed Action

Implementation of the INRMP complies with the Sikes Act, Section 101(a)(1)(B):

> "To facilitate the program, the Secretary of each military department shall prepare and implement an integrated natural resources management plan for each military installation in the United States…"

and Section 101(a)(2):

> "The Secretary of a military department shall prepare each (INRMP) … in cooperation with the Secretary of the Interior, acting through the Director of the United States Fish and Wildlife Service, and the head of each appropriate State fish and wildlife agency for the State in which the military installation is located. …the resulting plan for the military installation shall reflect the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources."

Implementation of the INRMP is required by DoD Directive 4700.4 (24 January 1989), which states that integrated natural resources management plans shall be maintained for DoD lands for the purpose of guiding planners and implementers of mission activities as well as natural resources managers. The Directive also states natural resources management plans shall be prepared cooperatively with appropriate Federal, State, and local officials, and that the plans shall be continually monitored, annually reviewed, and revised at least every five years.

Implementation of the INRMP, preparation of the Plan in cooperation with Federal and State wildlife agencies, and systematic review of the natural resources management program is required under Department of Defense Instruction 4715.3 (3 May 1996) and Army Regulation 200-1 (December 2007) Section 9, and the Headquarters Department of the Army Policy Memorandum (21 March 1997) entitled "Army goals and Implementing Guidance for Natural Resources Planning Level Surveys and Integrated Natural Resources Management Plan."

Implementation of the IWFMP complies with Army Wildland Fire Policy Guidance (4 September 2002), which states, "Installations with unimproved grounds that present a wildfire hazard and/or installations that use prescribed burns as a land management tool will develop and implement an Integrated Wildland Fire Management Plan (IWFMP) that is compliant and integral with the INRMP, the installation's existing fire and emergency services program plan(s), and the ICRMP."

5.2.2 No Action Alternative

Under the No Action Alternative, Fort Campbell would not implement the INRMP or component plans and would fail to comply with:

- The Sikes Act
- DoD Directive 4700.4
- DoDI 4715.3
- AR 200-1
- The HQDA INRMP Policy Memorandum
- The Fort Campbell Sustainability Plan
- Army Wildland Fire Policy Guidance

The Sikes Act is a federal law designed, in part, to protect the environment by requiring the Secretary of the Army to develop INRMPs. Under NEPA Section 1508.27, violation of a federal law is one of the factors to be considered in determining the severity of effects to the human environment.

Fort Campbell would not coordinate with the USFWS or state wildlife agencies to develop multi-disciplinary, long-term plans for conservation and management of fish and wildlife resources. Coordination with those agencies regarding natural resources management would be limited to agency coordination during project-specific NEPA analyses or ESA Section 7 processes.

Under the No Action Alternative, Fort Campbell would not conduct an annual comprehensive review of natural resources management activities, which is described in Section 6.8 of the INRMP. DoD Instruction 4715.3 requires that installations with INRMPs must conduct annual self assessments to review achievement of the conservation measures of merit.

5.3 Natural Resources

5.3.1 Soils

Soil conservation and management on Fort Campbell involves preventing/minimizing the development of bare and disturbed soil areas, identifying soil erosion, and restoring areas undergoing or susceptible to erosion. The Farmland Protection Policy Act (7 U.S.C. 4201 *et seq*; FPPA) is designed to minimize the extent to which Federal programs contribute to the unnecessary and irreversible conversion of farmland to nonagricultural uses. The FPPA requires federal agencies to evaluate adverse effects to preservation of farmland and consider alternative actions to lessen those adverse effects. Federal agencies must also ensure federal programs, to the extent practicable, are compatible with State, local, and private programs and policies to protect farmland.

5.3.1.1 Proposed Action

Under the Proposed Action, Fort Campbell would implement the INRMP, which describes the following goals for soil management:

- Prevent/minimize damage to soils by educating soldiers
- Reduce erosion by rehabilitating existing areas with bare/damaged soils
- Maintain vegetated riparian zones to stabilize soil on streambanks and minimize sediment run off and pollution-laden water into streams
- Avoid/minimize disturbance to the ground that results in bare soil and potentially leads to erosion

Five goals, 26 objectives and five monitoring actions are listed in the INRMP for soil conservation. All of the goals, objectives, and monitoring actions for soil conservation originate in other guidance and component management plans. The INRMP contains the conservation standard: "encourage trainers to site intensive land-disturbing activities, when possible, on the least erodible lands." The INRMP promotes the coordination of soil conservation activities with other natural resources management actions. The landscape-scale planning generated by the INRMP will facilitate evaluation of options to conserve prime farmlands on the installation. The INRMP annual checklist provides a useful mechanism for monitoring progress on soil conservation projects.

Disturbance of steep slopes and unstable or poorly drained soils is to be minimized. The INRMP provides a unified planning process that ensures the limitations of soils will be considered and managed to the maximum extent practicable. The IINRMP also outlines objectives for improving the firebreak system by eliminating a large proportion of unnecessary firebreaks and upgrading the necessary firebreaks, as well as standard procedures for minimizing soil erosion from existing and new firebreaks.

Implementation of the INRMP will not cause direct beneficial or adverse effects to soils. No prime farmland soils now in agricultural use will be permanently converted to other uses. The effects of individual INRMP projects to soils, including prime farmlands, will be assessed in project-specific environmental analyses. However, implementation of the plans will benefit soil conservation, including prime farmlands, by improving the effectiveness of soil conservation efforts on Fort Campbell.

5.3.1.2 No Action Alternative

Under the No Action Alternative, Fort Campbell would conduct all of the actions in the INRMP that pertain to soil conservation and rehabilitation. Soil conservation would be carried out under CAM Reg 385-5, the FMP, the ESMC, the Fort Campbell Policy for Storm Water Erosion and Sediment Control at Construction Projects, the ITAM 5-year Plan, the Watershed Management Plan, and Agricultural Tract Management Plans.

The CAM Reg 385-5 contains requirements for minimizing and remediating damage to soil during military activities such as excavation of berms and travel in vehicles. Because input of sediment-laden run-off into streams can affect water quality, the ESMC identifies maintenance of healthy aquatic communities and

clean water as primary goals for conservation of endangered bats, which feed on aquatic insects and drink from streams. The ESMC establishes Conservation Branch efforts to identify areas where soil is eroding and development of a prioritized list of soil rehabilitation projects that is coordinated with the efforts of the ITAM Program. The Fort Campbell Storm Water Management Plan establishes erosion prevention requirements for ground disturbing activities including establishment of new firebreaks and construction projects. The Watershed Management Plan describes routine surveys along streams to identify sources of eroding soil. Tract Management Plans prepared for agricultural outleases specify soil conservation measures required for those plots.

Because the INRMP promotes coordination among programs, soil conservation efforts without the INRMP are expected to be less efficient under the No Action Alternative. Without the review of the INRMP annual checklist, progress on soil conservation activities will not be monitored as frequently. Additionally, without coordination among programs implementing prescribed burns, more soil may be disturbed to create firebreaks and bog lines than would be necessary using a centrally-coordinated burning program. No direct adverse or beneficial effects to soils are expected from implementation of several component management plans. No prime farmland soils now in agricultural use will be converted to other uses. The effects to soils and prime farmlands from individual projects will be assessed in project-specific environmental reviews.

5.3.2 Water Resources and Aquatic Habitat

Conservation of surface and groundwater resources is an important aspect of maintaining a healthy ecosystem at Fort Campbell. Water quality must be protected to provide drinking water, recreation, and resources for wildlife. Reducing impacts to water quality from sediment is critical to support high quality streams. Maintaining healthy aquatic habitat and good quality water is important for conservation of the two federally endangered bat species present on Fort Campbell. Wetlands must be protected in accordance to federal laws and are an important component of the Fort Campbell ecosystem.

5.3.2.1 Proposed Action

Under the Proposed Action, Fort Campbell will implement the INRMP, which includes the following goals for conservation of aquatic and wetland habitats:

- Prevent/minimize water pollution and degradation of aquatic habitat by educating soldiers, residents, and employees, and contractors, and distributing accurate information about surface and groundwater resources in the GIS database
- Minimize input of sediment and other contaminants in storm water run-off entering surface water and groundwater (sinkholes)
- Improve the quality of water and aquatic habitat in streams that are currently not supporting of designated uses
- Ensure compliance with the Clean Water Act Sections 404 and 401
- Prevent/minimize degradation of wetlands by educating soldiers, residents, and employees about wetlands
- Minimize damage to vegetation, and input of sediment and other contaminants to wetlands

- Restore degraded wetlands to support future mitigation requirements (i.e., mitigation bank) as resources are available

Each of the goals, objectives and monitoring actions listed in the INRMP for protecting the quality of surface water or ground water quality originates in other guidance and management plans. Protection of surface water quality is an important factor in the conservation of habitat suitable for endangered bats that forage on Fort Campbell. Consequently, conservation standards, objectives and monitoring actions designed to conserve and monitor water quality originate in the ESMC. The Fort Campbell Stormwater Management Plan also establishes measures to prevent pollution of surface water and groundwater. The INRMP coordinates the efforts of various programs involved in protection of aquatic habitats and water quality. The INRMP annual checklist provides a useful mechanism for monitoring progress on aquatic habitat conservation projects.

The INRMP is the primary planning document addressing specific activities designed to comply with the Clean Water Act, Executive Order 11990, and the Army's "no net loss of wetlands" policy. The nine objectives and two monitoring actions established in the INRMP for wetland conservation are not found in other management plans. The INRMP also includes two conservation standards pertaining to wetlands. One standard establishes vegetated buffers at least 100 feet wide around wetlands, and the second states that construction projects and training should be planned to avoid wetlands to the maximum extent practicable (INRMP Section 7.0). Activities within the buffers are limited to those that would cause little or no disturbance to the wetland. Inspection of vegetated buffers around wetlands is one of the objectives established in the INRMP. The INRMP provides a mechanism for maintaining wetland delineations up to date (not older than 5 years), and for ensuring current information about wetland boundaries are contained in the GIS system. The INRMP promulgates education and coordination between the Conservation Branch and other organizations regarding avoiding damage to wetlands. The INRMP also establishes a mechanism for initiating wetland restoration.

Implementation of the INRMP will not directly beneficially or adversely affect surface or ground water resources, including wetlands. The effects of individual INRMP projects and prescribed burns to water resources will be assessed in project-specific environmental analyses. However, implementation of the INRMP will support efforts to improve water resources, including wetlands, on the installation by integrating protection of these resources into other management activities. The Proposed Action also is expected to indirectly benefit surface and groundwater resources downstream of the installation by maintaining good quality water flowing out of the installation. The INRMP provide unified planning processes that ensure sensitive natural resources, such as aquatic habitats, will be considered and protected to the maximum extent practicable. Furthermore, the Proposed Action will indirectly benefit wetlands and surface waters by maintaining vegetated buffers around those features that reduce inputs of sediment and pollution. Indirect benefits to water resources result in maintenance of existing habitat quality, rather than habitat improvements, and therefore are not considered significant effects.

5.3.2.2 No Action Alternative

Under the No Action Alternative, Fort Campbell will conduct all of the actions in the INRMP that pertain to conservation of aquatic habitat and protection of water quality. Education programs, updating the GIS system, establishing and monitoring water quality standards will take place under the ESMC and Watershed Management Plan. The ITAM Program would design and implement hardened water crossings

and implement the LRAM Program to minimize input of sediment into streams and sinkholes. The Fort Campbell Stormwater Management Plan would be implemented to minimize pollution of surface and groundwater from construction projects. These activities would indirectly benefit surface and ground water resources downstream of the installation by maintaining good water quality flowing out of the installation.

Because the INRMP promotes coordination among programs, efforts to protect aquatic habitat and water quality without the INRMP may be less efficient and effective than under the Proposed Action. Without the review of the INRMP annual checklist, progress on water resources conservation may not be monitored as frequently.

Under the No Action Alternative, Fort Campbell would comply with the Clean Water Act, Executive Order 11990, and Army policy regarding wetlands. The CAM Reg 385-5 requires that actions involving disturbing a "low area" be reviewed by the Directorate of Public Works (DPW). Environmental impact assessments associated with the NEPA process would evaluate effects of proposed actions, including prescribed burns, to wetlands. However, wetland compliance would not be integrated with other natural resources management or military training programs. Efforts to educate soldiers and other Fort Campbell personnel would not occur. Efforts to initiate wetland restoration would not occur.

No significant direct adverse or beneficial effects to water resources, including wetlands, are expected under the No Action Alternative. The effects to water resources from individual projects will be assessed in project-specific environmental reviews.

5.3.3 Terrestrial Habitat

Management of terrestrial habitats on Fort Campbell involves management of open areas (native grasslands and old fields), agricultural lands, and forest. Native grassland barrens on Fort Campbell are a unique ecological community.

5.3.3.1 Proposed Action

Under the Proposed Action, Fort Campbell will implement the INRMP, which includes the following goals for terrestrial habitat management:

- Manage the landscape to achieve the amount of suitable training and maneuver area described in the 2004 Range Development Plan
- Manage open areas on Fort Campbell on a landscape scale to support multiple uses of open areas, sustain native species, and maximize efficiency of management actions
- In a manner consistent with (the two goals above), expand the acreage of native grassland barrens by approximately 10,000 acres
- Support regional planning efforts for grassland areas to restore native habitat types and enhance habitat for wildlife
- Maintain a reimbursable program that provides lease opportunities for local farmers, revenue for the U.S. Army, and promotes sustainable agricultural activities consistent with the conservation of soil, water, and other natural resources
- Manage forest resources in the maneuver space to support planned military use of the land

- Maintain a healthy, sustainable forest on Fort Campbell that provides for natural habitat, conservation of endangered species, revenue from timber sales, and recreational opportunities
- Manage fire in a manner that protects human life and safety, minimizes damage to property, natural and cultural resources, and contributes to ecosystem management goals.

The INRMP is the primary mechanism for coordinating management of the landscape to meet requirements for training and other land uses. The INRMP translates land use requirements from the RDP and Sustainability Plan into natural resources management actions designed to achieve the desired conditions. Setting objectives for land use in the INRMP allows land use planning to incorporate multiple factors, including characteristics (e.g., soil erodibility, presence of rare species or habitats) that influence suitability for training, agriculture, and native grassland barrens.

Under the Proposed Action, Fort Campbell will implement the IWFMP, which integrates a primary tool for managing terrestrial habitat, prescribed burning, with the INRMP and other Fort Campbell plans. The IWFMP provides a unified approach to planning and coordinating prescribed burns to keep terrestrial habitat suitable for military training and ecological purposes (e.g., grassland birds). Prescribed fire is the primary management tool used to control encroachment of woody growth, which hinders military training, in grassland training areas. The IWFMP integrates the goals of military training and natural resources conservation into a single efficient approach. Implementation of the IWFMP supports effective management of terrestrial habitats.

Implementation of the INRMP will not result in direct beneficial or adverse effects to terrestrial habitats, including unique ecological communities (native grassland barrens). The effects of individual INRMP projects (e.g., expansion of grassland barrens) and prescribed burns will be assessed in project-specific environmental analyses. However, implementation of the plans will indirectly benefit terrestrial habitat by promoting landscape scale, long-term planning for land use and habitat management. The Proposed Action also results in indirect beneficial effects to native grassland barrens by supporting Fort Campbell's role in regional conservation efforts such as seed collection.

5.3.3.2 No Action Alternative

Under the No Action Alternative, Fort Campbell would implement the Grassland Management Plan, individual tract management plans for agricultural outleases, and the Forest Management Plan. Agricultural outlease and forest products reimbursable programs would continue. Prescribed fire would be implemented by the Forestry, Fish and Wildlife, and ITAM programs. However, management activities would not be coordinated among plans. For example, plans to apply fire to maintain old fields may not be coordinated efficiently with habitat improvement for migratory birds. Goals for eliminating noxious weeds in the IPMP likely will not be coordinated with vegetation control in the FMP or agricultural tract management plans. The No Action Alternative will not cause direct adverse or beneficial effects to terrestrial habitats, including unique ecological communities. The NEPA process would evaluate impacts of specific projects (e.g., creation of a new training range). However, there would be no pro-active planning on a landscape scale to avoid effects to sensitive resources. The military mission may not be as effectively supported without integrated, long-term plans. The land use requirements of the RDP and Sustainability Plan would not be integrated into natural resources management activities. The volume and condition of lands needed for

training would not be coordinated with plans for managing terrestrial habitats. Management of native grassland barrens as a unique ecological community would not be coordinated with the Range Development Plan, ITAM Program activities, agriculture, and other natural resources management activities. Fort Campbell would not participate in regional efforts to conserve grassland barrens. Without the review of the INRMP annual checklist, progress toward terrestrial habitat management goals would be monitored less frequently, and adaptive management would not be used to improve projects not meeting goals.

5.3.4 Fauna

This section addresses effects to game and non-game wildlife and fish species on Fort Campbell. Federally listed and state-listed species of animals and plants are addressed separately in Section 2.7 below.

5.3.4.1 Proposed Action

Under the proposed Action, Fort Campbell will implement the INRMP. The INRMP includes the following goals for management of wildlife and fish:

- Manage habitat to promote a balance of natural ecological processes and trophic structure that sustain native wildlife and fish,
- Enhance habitat to support abundant, self-sustaining populations of native game and non-game wildlife and fish,
- Promote the goals for the MBTA and Executive Order 13186 “Responsibilities of Federal Agencies to Protect Migratory Birds” by implementing the Fort Campbell Migratory Bird Management Strategy,
- Manage the hunting and angling programs to provide adequate recreational opportunities consistent with requirements of the Sikes Act, and to establish self-sustaining populations of game wildlife that are an integral part of the ecosystem, and
- Educate the Fort Campbell community about wildlife management initiatives, associated recreational opportunities, and wildlife native to the installation.

Management of wildlife and fish populations on Fort Campbell supports the requirement of the Sikes Act, which states that installations shall provide for fish and wildlife management, habitat enhancement/modification for fish and wildlife, public recreation associated with fish and wildlife, and public access to the installation (consistent with the military mission) for such recreation. The INRMP is the primary mechanism for planning habitat management activities to support wildlife and fish populations, and programs to monitor the health of those populations. Implementing the INRMP includes habitat improvements to support native species, surveys of various populations, and public education about fish and wildlife on the installation. Fish and wildlife surveys conducted under the INRMP support the adaptive management process; population trends identify which habitat management activities need more or less emphasis.

Fort Campbell manages fish and wildlife primarily with a landscape-level approach with the goal of providing a variety of high-quality natural habitats (e.g., forest of various ages, native grasslands, streams and riparian zones) that will sustain diverse populations of native fauna.

Coordination of several management programs is essential to achieve an appropriate balance of land uses across the landscape. The INRMP promotes coordination of fish and wildlife management with programs such as forestry and agriculture as well as military land use requirements. The INRMP integrates the federally-mandated Migratory Bird Strategy with other natural resources management initiatives, such as the Grassland and Forest Management Plans. In instances of pest animals (e.g., skunks, groundhogs, deer), the INRMP promotes coordination between the Fish and Wildlife Program and the Pest Management Program.

The Proposed Action also includes implementation of the IWFMP. Prescribed Burn Guidelines found in the IWFMP outline procedures for minimizing damage to important habitats, including rare wildlife and sensitive wildlife habitat. Damage to snag trees and nesting sites is to be minimized. The IWFMP provides a unified planning process that ensures sensitive natural resources will be considered and protected to the maximum extent practicable. Implementation of the IWFMP beneficially affects the management of habitat for native fauna.

5.3.4.2 No Action Alternative

Under the No Action Alternative, the hunting and fishing permit program would continue *status quo*. Therefore, the requirements of the Sikes Act pertaining to recreation would be met. No direct beneficial or adverse effects to fauna under the No Action Alternative are expected. However, habitat management activities designed to support wildlife and fish (e.g., creation of wildlife ponds) would not occur. The waterfowl management plan would not be prepared, and monitoring programs for fish and wildlife populations would not be conducted. While wildlife populations would adapt to the natural successional habitat changes, certain communities (e.g., grassland species) would decline as grasslands convert to forest in the absence of active management. Fort Campbell would not conduct long-term population monitoring, which is important for setting bag/creel limits and for managing habitat to support sustainable populations. Public education about recreational opportunities and native wildlife would not occur. Because the IWFMP would not be implemented, pre-burn planning and coordination regarding rare wildlife and sensitive wildlife habitat may not be as efficient.

Under the No Action Alternative, Fort Campbell would implement the Migratory Bird Strategy and the installation would conduct activities necessary to maintain compliance with the Migratory Bird Treaty Act and Executive Order 13186. The objectives listed in the INRMP that pertain to migratory birds (Section 5.10) would be implemented. However, management activities designed to sustain migratory birds and their habitat would not be integrated with other natural resources management activities.

5.3.5 Rare, Threatened, and Endangered Species

Protection of federally listed species and their habitat is required by the Endangered Species Act and AR 200-1. Army Regulation 200-1 also supports conservation of rare species on Army installations.

5.3.5.1 Proposed Action

Under the Proposed Action, Fort Campbell will implement the INRMP. The INRMP includes six goals and associated objectives that originate from the ESMC. Conservation standards designed to avoid effects to

federally listed species are implemented under both the INRMP and ESMC. The INRMP coordinates efforts to conserve the gray bat and Indiana bat with other natural resources management and military land use activities on Fort Campbell. The INRMP 5-year planning and annual update process provides a mechanism for coordination among Fort Campbell, the USFWS, and State wildlife agencies, which supports the protection of endangered species on Fort Campbell.

The INRMP also includes the following goal, which is not found in any other component plan, pertaining to rare (not federally listed) species: "Maintain self-sustaining populations of state-listed and rare species on Fort Campbell to the maximum extent practicable." The INRMP is the primary planning document addressing conservation of rare species. Objectives found in the INRMP include maintaining location data in the GIS system, conducting surveys for rare species, monitoring known populations, and avoiding impacts to known populations. The INRMP establishes a mechanism for monitoring and adaptive management if populations of rare species on the installation begin to decline.

The IWFMP includes Prescribed Burn Guidelines that address identification and avoidance of federally listed and rare species and their habitat. The Fish and Wildlife Program Manager must be consulted to identify the location of federally listed or rare species and sensitive sites on or near the proposed burn site. The IWFMP provides a unified planning process that ensures sensitive natural resources will be considered and protected to the maximum extent practicable, and that the minimum number of fires will be set to achieve habitat conditions favorable for native flora and fauna, including listed and rare species.

Implementation of the INRMP will not directly beneficially or adversely affect rare, threatened, or endangered species. The effects of individual INRMP projects and prescribed burns to rare and listed species will be assessed in project-specific environmental analyses. However, implementation of the INRMP and IWFMP will indirectly benefit rare and listed species, by integrating protection of these resources into other management activities. The INRMP and IWFMP provide unified planning processes that ensure sensitive species will be considered and protected to the maximum extent practicable. Indirect benefits to rare and listed species result in maintenance of the *status quo*, rather than significant improvement, and therefore are not considered significant effects.

5.3.5.2 No Action Alternative

Under the No Action Alternative, Fort Campbell would implement the ESMC, thereby maintaining compliance with the ESA and AR 200-1. Conservation standards, goals, objectives for conservation and recovery of the gray bat and Indiana bat would be implemented. Under Fort Campbell's NEPA process, effects of proposed actions, including prescribed burns, to federally listed and rare species would be evaluated. Therefore, no adverse or beneficial effects will occur under this alternative. However, efforts to conserve federally listed species may not be as efficiently coordinated with other management activities.

Under the No Action Alternative, Fort Campbell would not conduct surveys for rare flora and fauna and would not monitor known populations of rare plants. Measures to avoid impacts to rare species of plants may not be integrated with other natural resources management activities such as prescribed burning and forestry. During the environmental review process, Fort Campbell would evaluate effects to known populations of rare species from proposed projects. However, conservation of rare species will not be as effective without monitoring and surveys described in the INRMP, and the pre-burn planning process described in the IWFMP.

5.4 Cultural Resources

Natural resources management does not directly involve identification or conservation of cultural resources on Fort Campbell. Natural resources management personnel are required to protect cultural resources during activities, and to notify the CRM Program if new artifacts are found. Protection of cultural resources is required by Federal laws, Army regulations, an interagency Programmatic Agreement, and the Fort Campbell ICRMP.

5.4.1 Proposed Action

Under the Proposed Action Fort Campbell would implement the INRMP which reinforce the importance of protecting cultural resources during natural resources management activities. Protection of cultural resources is one of the natural resources conservation standards listed in Section 3.0 of the INRMP. INRMP actions that involve mapping spatial data in the GIS database contribute to protection of cultural resources. For example, comparison of planned soil restoration projects with the CRM database may identify eroding areas where archaeological artifacts need protection.

The IWFMP includes Prescribed Burn Guidelines that address the identification and avoidance of cultural resources. Cultural resources inventories must be consulted to identify the location of known resources on or near the proposed burn site. The IWFMP provides a unified planning process that ensures cultural resources will be considered and protected during prescribed burns.

Beneficial effects to cultural resources are expected to occur under the Proposed Action. The effects of individual INRMP projects will be assessed in project-specific environmental analyses. Implementation of the INRMP is expected to promote more efficient coordination between the natural and cultural resources personnel, and compliance with pertinent regulations is likely to be highest under the Proposed Action.

5.4.2 No Action Alternative

Under the No Action Alternative, Fort Campbell would implement the Cultural Resources Management Program, the interagency Programmatic Agreement, the Dig Permit Program, and the ICRMP. Requirements to avoid impacts to cultural resources will be enforced. The Dig Permit and environmental review processes will ensure ground disturbance for military training, agricultural cultivation, development of firebreaks, and new construction do not affect known cultural resources. No adverse or beneficial effects to cultural resources will be caused by the No Action Alternative. Effects of individual INRMP projects and prescribed burns will be assessed in project-specific environmental reviews when the projects are planned in detail.

5.5 Air Quality

Generally, natural resources management activities do not generate or emit air pollutants. None of the activities conducted to manage natural resources, including prescribed burning, requires an air quality permit from the State of Tennessee or Commonwealth of Kentucky. Vehicles and equipment (e.g., tractors, bulldozers) used by natural resources personnel may emit exhaust and generate dust. Prescribed burning may temporarily increase particulates in the air. Emissions resulting from natural resources management

activities will be small quantities, temporary, and localized. Emissions generated during natural resources activities will not significantly increase the amount of the seven criteria pollutants in the environment. Natural resources management activities are not expected to influence air quality monitoring or the regional air quality attainment status.

5.5.1 Proposed Action

Under the Proposed Action, Fort Campbell would implement the INRMP. Implementation of these plans is not expected to affect the use of vehicles or equipment, and therefore will not affect the quantity, location, or duration of emissions or dust.

The IWFMP contains a standard operating procedure for planning and implementing burns to minimize the presence of smoke and dispersion of smoke into unwanted areas (e.g., active training areas, residential areas, across roads, outside the installation). The IWFMP also contains a decision matrix in which unacceptable smoke conditions leads to wildfire suppression. Under the Proposed Action, planning and coordination of prescribed burning and wildfire suppression are expected to maximize air clarity and visibility.

5.5.2 No Action Alternative

Under the No Action Alternative, Fort Campbell would not implement the INRMP or IWFMP. No significant change in the use of vehicles or equipment is expected, therefore the quantity, location, or duration of emissions from those mobile sources would not change.

The Forestry, Fish and Wildlife, and ITAM programs would plan and set prescribed burns without coordinating with the Installation Wildland Fire Program Manager. There would be no standard operating procedure for smoke management during prescribed burns. Smoke from prescribed burns may not disperse as effectively as when the smoke management standard operating procedure is implemented. Direct effects from smoke may result in temporary reduction of visibility on the installation, which may impede military training or civilian activities. Indirect effects from smoke may result in temporary reduction of visibility outside the installation if smoke disperses outside installation boundaries. However, smoke will not significantly affect air quality or Fort Campbell's compliance with laws or guidance regulating air pollution.

5.6 Noise

Natural resources management activities conducted by the Conservation Branch do not contribute to noise generated on Fort Campbell. No adverse effects from noise are expected under either alternative. However, the Forestry Program contributes to management of noise. Certain forest stands near airfields are managed to reduce the visibility of noise sources, thereby reducing awareness of the sound in the surrounding community. Forest stands that contribute to noise management are identified in the GIS database and are specifically managed by the Forestry Program to minimize noise. Management objectives for these stands are described in the Forest Management Plan, which will be implemented under the Proposed Action and No Action Alternative. Therefore, actions conducted under both alternatives slightly benefit efforts to manage noise on the installation.

5.7 Socioeconomics

The only aspect of socioeconomics that may be affected by the Proposed Action or No Action Alternative is outdoor recreation.

5.7.1 Proposed Action

The INRMP is the primary document for planning natural resources management to support outdoor recreation activities including hunting, fishing, camping, hiking, and birdwatching. Under the Proposed Action, Fort Campbell will implement the INRMP, which includes goals and objectives for consumptive and non-consumptive uses such as enhancing habitat for wildlife and fish, stocking fish, setting bag and creel limits, monitoring populations of game species, and monitoring use of Fort Campbell by anglers (INRMP Sections 5.9 and 5.12). Management activities specified in the INRMP are designed to support outdoor recreation programs on the installation. The Proposed Action will sustain the quality of human life on Fort Campbell by enhancing the quantity and quality of outdoor recreation opportunities, and by managing the natural resources in which recreational activities occur.

5.7.2 No Action Alternative

Under the No Action Alternative, the public would be allowed access to the maneuver space, provided such use is consistent with the military mission. The iSportsman office and portal (DPW Environmental Division) would perform the administrative functions associated with outdoor recreation; hunting and fishing permits would be issued to the public. Therefore, requirements of the Sikes Act would be met. However, fish stocking would not occur. Habitat management projects designed to enhance game species populations, such as placement of fish attractors or development of native grasslands, would not occur. Monitoring of game species, predators, and waterfowl would not occur. Electroshocking surveys to monitor sport fish populations would not occur. Information would not be collected from hunters and anglers for the purpose of evaluating public demand for recreation opportunities. No adverse effects to game species are expected under the No Action Alternative. However, without active management and monitoring of game species and their habitat, the quality of outdoor recreation opportunities on Fort Campbell is expected to decline over time.

5.8 Human Health and Safety

Aspects of natural resources management that affect human health and safety include management of hazardous materials and fire safety.

5.8.1 Proposed Action

The amount of hazardous materials used by natural resources personnel in the maneuver space is miniscule relative to the POL and pesticides stored and used in the airfields and cantonment area. Under the Proposed Action, natural resources management personnel adhere to the Spill Control, Containment, and Countermeasures Plan and the instructions in the Environmental Handbook. Implementing the INRMP and IWFMP is not expected to significantly change the amount of hazardous materials used in the maneuver space. The INRMP contains two pertinent natural resources management standards:

- Do not apply pesticides, fertilizers, and other chemicals into, or within 100 feet of perennial and intermittent streams, sinkholes, and other karst features
- Refuel vehicles and conduct other activities with potential for pollutant spills at least 100 feet from sinkholes

These two standards reinforce the importance of managing hazardous substances such that none enters the environment.

The INRMP contains goals and objectives for pest management that originate in the Fort Campbell Integrated Pest Management Plan (IPMP). The IPMP directs pest management efforts in compliance with Federal laws and Army policies (Appendix P). The IPMP establishes guidance for the storage, handling, and tracking of pesticides, and for the certification and training of pesticide applicators. Appendix P of the INRMP identifies points of coordination between the Pest Management and Forestry, Agricultural Outlease, and other programs. Because the INRMP reaffirms guidance on integrating pesticide safety procedures with natural resources management activities, adherence to the safety procedures is expected to be most effective under the Proposed Action.

The IWFMP establishes standards for the training and certification of personnel fighting wildfires and conducting prescribed burns. The Plan clearly describes roles and responsibilities for planning prescribed burns and suppressing wildfires. It lists requirements for personal protective equipment and procedures designed to maximize personal safety Implementation of a single plan and establishment of the Integrated Wildland Fire Program Manager will ensure pertinent training, certification, and safety requirements are met in all programs implementing prescribed fire on Fort Campbell. The IWFMP will improve human safety on the installation.

5.8.2 No Action Alternative

Under the No Action Alternative, Fort Campbell would implement the IPMP. Measures established in the IPMP for storage, handling, and tracking of pesticides, and for the certification and training of pesticide applicators would be implemented. Fort Campbell would comply with laws and regulations pertaining to pesticide management. However, coordination of pesticide management requirements with other natural resources management programs (e.g., Forestry, Agricultural Outlease) would not be maximized under the No Action Alternative. Guidelines for vehicle refueling and applications of chemicals near karst and water features would be implemented under the ESMC.

Under the No Action Alternative, the IWFMP would not be implemented. Standards for training and certification of personnel, personal protective equipment, and safety procedures may not be uniform across programs.

Generally, under the No Action Alternative, handling of hazardous materials will be compliant with pertinent laws and guidelines. Measures to protect human safety will be in place. However, activities of various programs will not be integrated, which may eliminate efficiencies (e.g., sharing trained personnel among programs, minimizing amounts of pesticides needed) that are gained by implementing a long-term, unified plan.

5.9 Indirect Effects

Indirect effects are caused by the action but are distant in time or space. Temporal indirect effects of the Proposed Action and No Action Alternative would occur after the 5-year period specified in the INRMP (2020–2025). Implementing the Proposed Action will provide a 5-year plan upon which to build natural resources management beyond the year 2025. Because it addresses all natural resources and involves all programs that manage natural resources, the INRMP facilitates the ecosystem management approach. Implementing the INRMP will sustain over time a healthy, balanced ecosystem and conditions that support the military mission. The process of annual review and update of the INRMP provides a mechanism to keep natural resources management projects consistent with reasonable goals. The annual review also ensures that natural resources management projects maintain compliance with pertinent federal and state regulations and remain consistent with the military mission. Implementing the INRMP provides the indirect benefit of a comprehensive, detailed plan from which future management plans can be developed.

Under the No Action Alternative, several resource-specific plans will be implemented by various programs to manage natural resources on Fort Campbell. Absence of a single unifying plan makes the ecosystem management approach more difficult. Failure to coordinate project plans and data are likely to result in inefficiencies or duplication of efforts. Resource-specific management may result in ecosystem imbalances that magnify over time. Some resource-specific plans include periodic review and updates, while some do not. Without the annual review process, planned projects may become inconsistent with the military mission; no corrective mechanism would be in place to address that inconsistency. While no significant adverse indirect effects are anticipated, absence of the INRMP reduces the likelihood that the Fort Campbell environment will, on a long-term basis, be suitable to support the military mission and the ecosystem balance.

Spatial indirect effects of the Proposed Action and No Action Alternative involve water quality downstream of the installation, regional conservation efforts for native grassland barrens, and smoke from prescribed burns/wildfires dispersing across installation boundaries. Those indirect effects are addressed in Sections 5.3.2, 5.3.3, and 5.5 respectively.

5.10 Cumulative Effects

Cumulative effects result from the incremental or collective impact to the environment when combined with other past, present, and reasonably foreseeable future actions. Cumulative effects of the Proposed Action and No Action Alternative relate to the function of the INRMP in other long-range planning efforts at Fort Campbell. Cumulative effects related to the IWFMP are not anticipated.

Implementing the INRMP supports long-range land use planning on Fort Campbell. Divisions other than Environmental, such as Master Planning, use the INRMP to identify conditions of the Fort Campbell environment. The Range Development Plan (Nakata 2004) prepared for DPTMS used the INRMP to characterize existing training resources and to identify opportunities and constraints for modifying the landscape to improve training resources. Because the INRMP is an integrated, long-term plan, it supports gradual management over time, rather than short-term, drastic changes to the environment. The INRMP provides a mechanism for integrating land use plans into natural resources management objectives. For example, the need for additional grassland suitable for training is incorporated into INRMP objectives for

managing terrestrial habitat. Once integrated into the INRMP, the potential effects of those land use plans on other resources (e.g., forest, wetlands, outdoor recreation) can be evaluated and addressed. Therefore, the cumulative effect to the environment from the Proposed Action is expected to be beneficial.

Under the No Action Alternative, Fort Campbell planners must gather and synthesize numerous resource-specific management plans. The lack of an INRMP will not prevent master planning, range development, or the environmental review process. However, those processes may not be as efficient. Without the INRMP, land use requirements for training, housing, and other purposes will be disconnected from management conducted for the purpose of ecological conservation. While no significant adverse cumulative effects to the environment are expected, land management under the No Action Alternative is likely to be less effective and efficient.

6.0 CONCLUSION

In summary, the Proposed Action is not expected to cause significant beneficial or adverse effects to the environment (Table 3). Because the No Action Alternative will lead to violation of federal law (the Sikes Act), that alternative involves significant adverse effects to the human environment. Other negative aspects of the No Action Alternative are related to non-compliance with Army policies requiring implementation of an INRMP, reduction in efficiency and effectiveness of natural resources management activities, and reduced ability to support the Fort Campbell military mission. However, because resource-specific management plans would be implemented and legal requirements for resource protection would be met, these aspects of the No Action Alternative do not result in significant effects to the human environment.

Positive aspects of the Proposed Action relate to the improved efficiency and effectiveness resulting from a long term plan that is routinely evaluated and adapted. The Proposed Action most effectively supports the military mission. Generally, the Proposed Action promotes the development and maintenance of a healthy ecosystem suitable for multiple uses at Fort Campbell. However, implementing the INRMP and IWFMP is not expected to result in significant environmental improvements relative to the existing conditions. Therefore, the effects of the Proposed Action are not considered significant as defined by the NEPA implementing regulations (40 CFR 1508.27 and 32 CFR 651).

Table 3. Summary of consequences of the Proposed Action and No Action Alternative.

Resource	Proposed Action	No Action Alternative
Compliance with pertinent laws, regulations, and guidance	Full compliance	Significant adverse effect resulting from violation of the Sikes Act. Negative aspect of non-compliance with DoD guidance (DoD Directive 4700.4, DoDI 4715.3, AR 200-1, HQDA INRMP Policy Memorandum, Fort Campbell Sustainability Plan, and Army Wildland Fire Policy Guidance)
Soils (including prime farmlands)	Maximum soil conservation from improved coordination among programs, landscape-scale planning, project effectiveness, and efficiency	Positive soil conservation measures found in several component plans and the Fort Campbell Stormwater Management Plan
Water resources/aquatic habitat (including wetlands)	Maximum water quality and aquatic habitat preservation from improved coordination among programs, project effectiveness and efficiency, integration of wetlands into planning	Positive water quality and aquatic habitat preservation from several component plans and the Fort Campbell Stormwater Management Plan. No formal management plan for wetlands
Terrestrial habitat	Maximum effectiveness/efficiency with terrestrial habitat management and support of military mission	Positive conservation of native grass barrens under Grassland Management Plan. No formal mechanism for integrating military mission
Fauna	Maximum coordination among programs, project effectiveness and efficiency, population monitoring to support future decisions about hunting and habitat management	No significant direct adverse or beneficial effect. No formal plan to manage fish/wildlife habitat likely to lead to decline of certain populations in the long term. No population monitoring.
Rare, threatened, and endangered species	Maximum coordination among programs, project effectiveness/efficiency, integration of rare plant conservation	Beneficial effect of ESMC. No formal management plan for rare plants
Cultural resources	Maximum coordination of natural resources management activities with CRM conservation efforts	No significant adverse or beneficial effects, ICRMP guides conservation of CRM
Air quality	No significant adverse or beneficial effect; improved control of smoke from fires	No significant adverse or beneficial effect; increased potential for smoke reducing visibility on and off the installation

Table 3 continued. Summary of consequences of the Proposed Action and No Action Alternative.

Resource	Proposed Action	No Action Alternative
Noise	No effect	No effect
Socioeconomics	Improved quantity and quality of outdoor recreation	No formal plan and fewer projects to manage land for recreation; decline in quality of recreation opportunities
Human health and safety	Improved coordination and efficiency of training for fire fighting and handling hazardous materials	No significant beneficial or adverse effect
Indirect Effects	More effective management of ecosystem in the long term	Less effective management of ecosystem in the long-term
Cumulative Effects	More effective coordination with and support of land use planning throughout the installation	Less effective coordination with and support of land use planning throughout the installation

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APPENDIX: AGENCY AND PUBLIC COMMENTS

STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
NASHVILLE, TENNESSEE 37243-0435

DAVID W. SALYERS, P.E.
COMMISSIONER

BILL LEE
GOVERNOR

July 14, 2020

Via Electronic Mail to daniel.l.etson.civ@mail.mil

Attn: Dan Etson, Environmental Engineer
NEPA Program Manager Compliance Branch
Fort Campbell's Directorate of Public Works
871 Bastogne Avenue,
Fort Campbell, KY 42223

Dear Mr. Etson:

The Tennessee Department of Environment and Conservation (TDEC) appreciates the opportunity to provide comments on the United States Army (Army) *Fort Campbell Integrated Natural Resources Management Plan* (INRMP) *2020-2025 Programmatic Environmental Assessment* (PEA) *and Finding of No Significant Impact* (FONSI), which considers environmental impact of implementing the INRMP at Fort Campbell, Kentucky. The INRMP sets goals, objectives, management actions, and monitoring activities for overseeing and managing natural resources[1] at Fort Campbell over a five (5) year period, from 2020 through 2025. The Army notes that many projects contained in the previous INRMP, covering the 2014-2019 period, are complete and not included in this proposed action. Nine (9) broad environmental considerations were provided to assess impacts of the INRMP: air quality, biological resources, cultural resources, health and safety, land use, noise, soils, socioeconomics, and water resources. The PEA only addresses the INRMP as a planning document; individual projects undertaken under the INRMP will trigger a subsequent project-specific analysis of effects to comply with the National Environmental Policy Act (NEPA).

Actions considered in detail within the Draft PEA with Unsigned FONSI include:

- **Alternative A – Fully Implement the Fort Campbell INRMP (Proposed Action).** Fort Campbell proposes to fully implement the INRMP including its list of resource goals, objectives, management actions, and monitoring activities for fiscal years 2020 through 2025. The INRMP is intended to minimize adverse impacts to natural resources from actions required for training and non-training activities on Fort Campbell. The Army notes that project execution depends on funding availability, but that Fort Campbell will attempt to implement all projects planned for a given fiscal year. Projects described under the INRMP would receive their own impacts analysis once planned in enough detail.

[1] The INRMP is a master plan which integrates component existing plans – Endangered Species Management, Bald Eagle Management, Forest Management, Integrated Wildland Fire Management, Fish and Wildlife Management, Integrated Pest Management, Agricultural Outlease Tract Management, Grassland Management, Watershed Management, the ITAM 5-year Plan, Migratory Bird Management, and Stormwater Management – and additionally addresses wetlands, rare plants, game and non-game fish and wildlife, riparian zones, outdoor recreation, wildfire, and prescribed fire.

- **Alternative B – No Action Alternative.** Alternative B, the No Action Alternative, would result in management of Fort Campbell's natural resources without the guidance of the INRMP 2020-2025. Some existing component plans would guide natural resource management, but actions would be executed without integrating and coordinating these plans as described in the INRMP. Under this alternative, Fort Campbell's natural resource management would ensue without plans specific to managing wetlands, rare plants, game and non-game fish and wildlife, riparian zones, outdoor recreation, wildfire, and prescribed fire.

- **Alternative C – No Management Alternative.** Alternative C, the No Management Alternative, would result in no management of natural resources on Fort Campbell. This alternative would lead to non-compliance with the Sikes Act, Endangered Species Act, Clean Water Act, Migratory Bird Treaty Act, DoDI 4715.3, and AR 200-1, as well as potentially violating Clean Water Act and state water quality regulations. This alternative is therefore not feasible due to its violation of federal and state regulations and lack of alignment with the military mission. The No Management Alternative is not considered in the Draft PEA.

TDEC has reviewed the Draft PEA with Unsigned FONSI and provides the following comments:

Air Resources

TDEC notes that the Draft PEA and INRMP do not include a list of actual projects, but rather a set of guidance and principals that the facility management is expected to follow for planning future projects. Additional and more targeted comments are expected when project-specific details are available.

TDEC suggests the following:

- Amending the language referencing "maintenance area" to "attainment area" or as "attainment with a maintenance plan" (p 16),
- Including a discussion of emissions generated from mobile and nonpoint emission sources to include emissions for those source categories at the facility,
- Updating the NAAQs table, as the data are out of date (p 15),
- Providing emissions estimates for prescribed burns, and
- Presenting data or emissions impacts for construction projects.

Cultural and Natural Resources

TDEC believes the Draft PEA adequately addresses potential impacts to cultural and natural resources within the proposed project area and supports the plan. TDEC acknowledges the thoroughness of the plan and its contribution to the natural resources of the installation, an installation with state-wide significance especially in terms of grassland ecosystems.

TDEC welcomes working with Fort Campbell to ensure they have the most current data related to known rare species, plants, and animals, and would like to begin a dialog related to data sharing. TDEC also asks to be included in consultation related to rare plants in Tennessee, alongside the US Fish and Wildlife Service, the Tennessee Wildlife Resources Agency, and the Kentucky Department of Fish and Wildlife Resources, and suggests that Fort Campbell may wish to also consult with the Kentucky Nature Preserves Commission.

TDEC notes that the INRMP cites a 2004 version of the Tennessee Rare Plant List and suggests utilizing the 2016 version[2]. TDEC expects the most current list[3] to be finalized this year.

Solid Waste

TDEC believes that the Draft PEA adequately addresses potential impacts to solid and hazardous waste.

Water Resources

TDEC commends the use of 100-foot barriers around sinkholes, streams, and wetlands. TDEC encourages Army to include additional information relating to protection of the karst features that could impact Boiling Spring under Chapter 5.0 and suggests the consideration of dye tracing to assess ground water and surface water contamination.

TDEC notes that the Division of Water Pollution Control, as referenced in the document, is now the Division of Water Resources.

TDEC also notes that the total water storage figure is from 1994 (p 43 of the INRMP) and is likely no longer correct. If Fort Campbell does only have 2.75 MG of water storage, they could be in violation of the required 24-hour storage under Tennessee's Public Water System Rule 0400-45-01-.17(14), which requires a community water system serving over 50 connections to have 24-hour storage based on daily average production.[4]

TDEC appreciates the opportunity to comment on this Draft PEA with Unsigned FONSI. Please note that these comments are not indicative of approval or disapproval of the proposed action or its alternatives, nor should they be interpreted as an indication regarding future permitting decisions by TDEC. Please contact me should you have any questions regarding these comments.

Sincerely,

Jennifer Tribble
Policy Analyst, Office of Policy and Sustainable Practices
Tennessee Department of Environment and Conservation
Jennifer.Tribble@tn.gov
(615) 532-5043

cc: Kendra Abkowitz, TDEC, OPSP
Robert Brawner, TDEC, APC
Daniel Brock, TDEC, DOA
Roger McCoy, TDEC, DNA
Lisa Hughey, TDEC, SWM
Tom Moss, TDEC, DWR

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[2] Found at https://www.tn.gov/content/dam/tn/environment/documents/na_rare-plant-list-2016.pdf

[3] Will be available at https://www.tn.gov/environment/program-areas/na-natural-areas/na-natural-heritage-inventory-program.html

[4] TDEC records indicate that average daily production is 3.14 MGD, which is higher than the 2.75 MG storage capacity cited in the INRMP.

ANDY BESHEAR
GOVERNOR

REBECCA W. GOODMAN
SECRETARY

ANTHONY R. HATTON
COMMISSIONER

ENERGY AND ENVIRONMENT CABINET
DEPARTMENT FOR ENVIRONMENTAL PROTECTION

300 SOWER BOULEVARD
FRANKFORT, KENTUCKY 40601
TELEPHONE: 502-564-2150
TELEFAX: 502-564-4245

July 23, 2020

Mr. Dan Etson
Compliance Branch, IMCB-PWE
Public Works, Environmental Division
Building 871, Bastogne Avenue
Fort Campbell, KY 42223-5130

Re: Fort Campbell Integrated Natural Resources Mgmt Plan 2020-25, PEA-SERO 2020-23

Dear Mr. Etson,

The Energy and Environment Cabinet serves as the state clearinghouse for review of environmental documents generated pursuant to the National Environmental Policy Act (NEPA). Within the Cabinet, the Commissioner's Office in the Department for Environmental Protection coordinates the review for Kentucky state agencies. We received your letter requesting an environmental review for this project. We have reviewed the document and provided comments below.

Division of Water

Water Quality Branch:
No comments. Questions should be directed to Andrea Fredenburg, Water Quality Branch, (502) 782-6950, Andrea.Fredenburg@ky.gov.

Water Resources Branch:
Any construction within a 100-year floodplain will require a Kentucky DOW Application for Permit to Construct Across or Along a Stream. This includes pipeline stream crossings that are not covered under 401 KAR 4:050. Questions should be directed to Shawn Hokanson, Floodplain Management Section, (502) 782-6977, Shawn.Hokanson@ky.gov.

A Clean Water Act Section 401 Water Quality Certification from the DOW is required for this project. Questions should be directed to Samantha Vogeler, Water Quality Certification Section, (502) 782-6995, Samantha.Vogeler@ky.gov.

Watershed Management:

The PEA clearly demonstrates the value of the integration of resource management, training support planning, and facility management. With respect to water supply planning and water quality, the reviewer fully supports the stated goals for mitigation of water quality impacts through best management and preventative practices (BMP). Specifically, BMPs addressing hazardous chemical, fuel, and sediment. However, while unlikely to cause significant impacts contributions from portable or slit latrines that may concentrate human waste within the training area may need to be addressed. through additional BMPs. This is particularly important near karst features or streams contributing to the Boiling Springs groundwater basin. Questions should be directed to Chloe Brantley, Water Supply Section, (502) 782-6898, Chloe.Brantley@ky.gov.

The proposed work is endorsed by the Groundwater Section of the Watershed Management Branch. However, the proposed work is located in an area with a high potential for karst development where groundwater is susceptible to direct contamination from surface activities. It is our recommendation that proposed work be made aware of the requirements of 401 KAR 5:037 and the need to develop a Groundwater Protection Plan (GPP) for the protection of groundwater resources within that area. Questions should be directed to Adam Nolte, Groundwater Section, (502) 782-1312, Adam.Nolte@ky.gov or Kurtis Spears, Groundwater Section, (502) 782-7119, Kurtis.Spears@ky.gov.

Field Operations Branch:
No comments. Questions should be directed to Connie Coy, Field Operations Branch, (502) 782-6587, Constance.Coy@ky.gov.

Division of Waste Management

Any solid waste encountered by this project must be disposed of at a permitted facility.
If asbestos, lead paint and/or other contaminants are encountered for this project the Kentucky Division of Waste Management may be contacted for proper disposal and closure.
Please keep in mind additional locations of releases, potential contamination or waste facilities may be present but unknown to the Fort Campbell facility and Kentucky Division of Waste Management. Therefore, it is recommended that appropriate precautions be taken during construction activities. Please report any evidence of illegal waste disposal facilities and releases of hazardous substances, pollutants, contaminants or petroleum to the 24-hour Environmental Response Team at 1-800-928-2380.

Division for Air Quality

The Division for Air Quality has no comments for this project.

Kentucky Nature Preserves

Your project might have the potential of impacting federally or state listed species and natural communities. Go to the Kentucky Biological Assessment Tool (kynaturepreserves.org) to obtain a Standard Occurrence Report for information regarding listed species known within your project area. The report will also provide information on public and private conservation lands,

areas of biodiversity significance, and other natural resources in your project area for which the Office of Kentucky Nature Preserves maintains data.

This review is based upon the information that was provided by the applicant. An endorsement of this project does not satisfy, or imply, the acceptance or issuance of any permits, certifications or approvals that may be required from this agency under Kentucky Revised Statutes or Kentucky Administrative Regulations. Such endorsement means this agency has found no major concerns from the review of the proposed project as presented other than those stated as conditions or comments. If you should have any questions, please contact me at (502) 782-0863 or e-mail Louanna.Aldridge@ky.gov.

Sincerely,

Louanna Aldridge
Staff Assistant
Office of the Commissioner
Department for Environmental Protection
Energy and Environment Cabinet