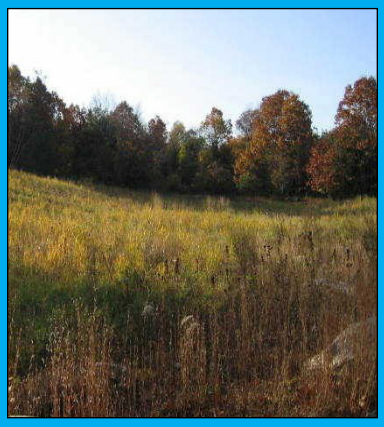
Integrated Natural Resources Management Plan Update

Stone's Ranch Military Reservation and East Haven Rifle Range, Connecticut

Final



October 2020

Final
Integrated Natural Resources Management Plan Update

Stone's Ranch Military Reservation and East Haven Rifle Range, Connecticut

Prepared for
Connecticut Army National Guard
CTARNG Headquarters
360 Broad Street, Hartford, CT 06105

OCTOBER 2020

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SIGNATURE PAGE
STONE'S RANCH MILITARY RESERVATION AND EAST HAVEN RIFLE RANGE
CONNECTICUT

This Integrated Natural Resources Management Plan (INRMP), dated October 2020, was developed for Stone's Ranch Military Reservation and East Haven Rifle Range in accordance with the Sikes Act, as amended (16 U.S. Code §670a et seq.); Army Regulation 200-1 – *Environmental Protection and Enhancement*; Department of Defense Instruction 4715.03, *Natural Resources Conservation Program*; and Department of Defense Manual 4715.03, *Integrated Natural Resources Management Plan Implementation Manual*, and in cooperation with the U.S. Fish and Wildlife Service (USFWS) and the Connecticut Department of Energy and Environmental Protection (CT DEEP). The management of natural resources in this INRMP reflects the mutual agreement of all parties.

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1. EXECUTIVE SUMMARY

The Connecticut Army National Guard (CTARNG) is required by the Sikes Act, as amended (16 U.S. Code [U.S. Code (U.S.C.)] §670a et seq.), to develop and implement an Integrated Natural Resources Management Plan (INRMP) for the Stone's Ranch Military Reservation (SRMR) and East Haven Rifle Range (EHRR) (Figure 1-1). The initial CTARNG INRMP was signed and implemented in 2001 and the Updated CTARNG INRMP was signed and implemented in 2007. The National Environmental Policy Act (NEPA) process was used to meet the Department of Defense's (DoD) INRMP public review requirements for the initial CTARNG INRMP in 2001 and 2007. CTARNG has concluded that an INRMP update is necessary and therefore is proposing to implement an INRMP update and not a revision. The CTARNG INRMP has been updated, reorganized, and reviewed for operation and effect in consultation with U.S. Fish and Wildlife Service (USFWS), Connecticut Department of Energy and Environmental Protection (CT DEEP), and CTARNG. The reorganization has been completed in accordance with the March 2019 the *Army National Guard (ARNG) Installations and Environment (I&E) Directorate Policy for Integrated Natural Resource Management Plans (INRMP)*, and includes the incorporation of updated natural resources data.

The INRMP is the installation commander's adaptive plan and main guidance document and tool for managing natural communities and natural resources to support and be consistent with the military mission while protecting and enhancing those natural communities and resources for multiple use, sustainable yield, and biological integrity. The purpose of the INRMP is to ensure that natural resource conservation measures and Army activities on mission lands are consistent with federal stewardship requirements and to sustain native natural resources on an ecosystem scale and to comply with current legal mandates while resulting in no net loss in capability to fulfill the military training mission.

The following briefly describes the two installations covered within this INRMP:

- ***Stone's Ranch Military Reservation*—**SRMR is an 1,863-acre facility located on state-owned property in East Lyme (Figure 1-2) that provides battalion-sized field training exercise/command post exercise, and non-live fire maneuver training areas. The installation is predominately mixed-hardwood forests, with grassland and open areas, as well as coniferous forest. SRMR has wetland resources and supports listed species.

- ***East Haven Rifle Range*—**This 122-acre facility in East Haven (Figure 1-3), located on state-owned property, provides weapons qualification and training for small arms and non-mechanized tactical maneuvering. EHRR is predominately mixed-hardwood forest, with mowed and open field grassland areas. This installation also supports wetland resources and provides habitat for rare and listed species.

Consistent with the use of military installations to ensure the preparedness of the Armed Forces, the land and resources of CTARNG installations must be properly managed to minimize negative impacts from use, to preserve sensitive habitats and rare species, and to promote the sustainment of native natural communities. This INRMP is a practical guide for the management and stewardship of natural resources present at CTARNG installations, while ensuring the successful

accomplishment of the military mission. The INRMP was developed using an interdisciplinary approach. Consistent with the requirements of the Sikes Act (16 U.S.C. §670a et seq.), representatives from the USFWS and the CT DEEP participated in the update of this INRMP. The Sikes Act requires the preparation of an INRMP in cooperation with USFWS and the appropriate state fish and wildlife agency (i.e., CT DEEP). In addition, it is required that the resulting plan reflect the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources.

This INRMP provides a description of the installations and surrounding environments and presents various management practices designed to mitigate negative impacts and enhance the positive effects of the installations' mission on regional ecosystems. Throughout the development of this INRMP, management issues were identified in a number of natural resources subject areas. One of the purposes of this INRMP is to identify goals and objectives for the CTARNG installations and to obtain workable and useful solutions for each topic of concern.

Based on the guidance provided in the March 2019 the *Army National Guard (ARNG) Installations and Environment (I&E) Directorate Policy for Integrated Natural Resource Management Plans (INRMP)*, this INRMP provides the purpose and scope, authority and relevant laws, and information on funding and roles and responsibility in the text. The bulk of the information on INRMP goals and project descriptions, a summary of natural resources at the installations, and additional relevant information is presented in the appendices.

The appendices provide updated and/or expanded information on CTARNG resources that became available since the 2006 INRMP was prepared. In instances where no new information was available, a reference is made to the 2001 and/ or 2006 INRMP. Appendix A of this INRMP provides the references for the document, while Appendix B provides a list of acronyms and abbreviations. The following appendices present resource information pertinent to this INRMP:

- Appendix C: Installation Overviews
- Appendix D: Project Implementation Table and Annual Work Plans
- Appendix E: Physical Environment
- Appendix F: Ecosystems and the Biotic Environment
- Appendix G: Natural Resources Program Management
- Appendix H: Fish and Wildlife Management
- Appendix I: Outdoor Recreation and Public Access to Natural Resources
- Appendix J: Management of Threatened and Endangered Species and Habitats
- Appendix K: Water Resource Protection
- Appendix L: Wetland Protection
- Appendix M: Grounds Maintenance
- Appendix N: Forest Management
- Appendix O: Wildland Fire Management
- Appendix P: Integrated Pest Management Program
- Appendix Q: Public Outreach
- Appendix R: Climate Change
- Appendix S: Agency Consultation

- Appendix T: Annual Reviews
- Appendix U: ARNG Record of Environmental Consideration

The following subject areas are not applicable at these CTARNG installations and are not analyzed in this INRMP: Conservation Law Enforcement, Agricultural Outleasing, Coastal and Marine Resource Management, Bird and Aircraft Strike Hazard, Cultural Resource Protection, and Geospatial Information Systems. The INRMP presents practicable alternatives and recommendations that seek to both promote the mission at these installations while providing for management and stewardship of natural resources that would conserve and enhance existing ecosystems on the installations.

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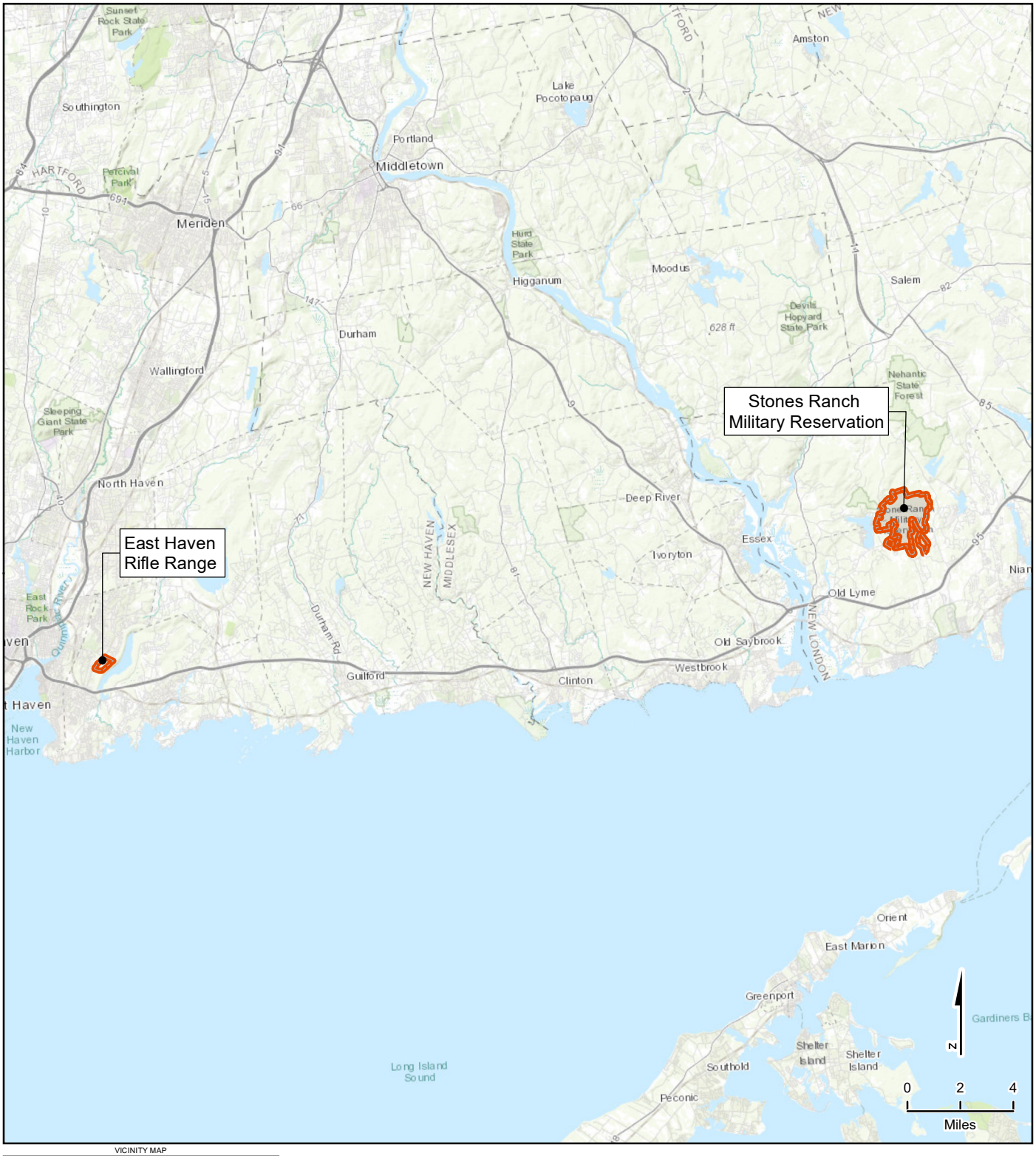

VICINITY MAP

Legend

Feature Name

Training Sites

Figure 1-1
Vicinity Map
CTARNG INRMP
New Haven County
and New London
County, CT

Map Date: 8/11/2020
Source: Esri, DeLorme, HERE, USGS, et.al 2020
Projection: WGS 1984 UTM Zone 18N

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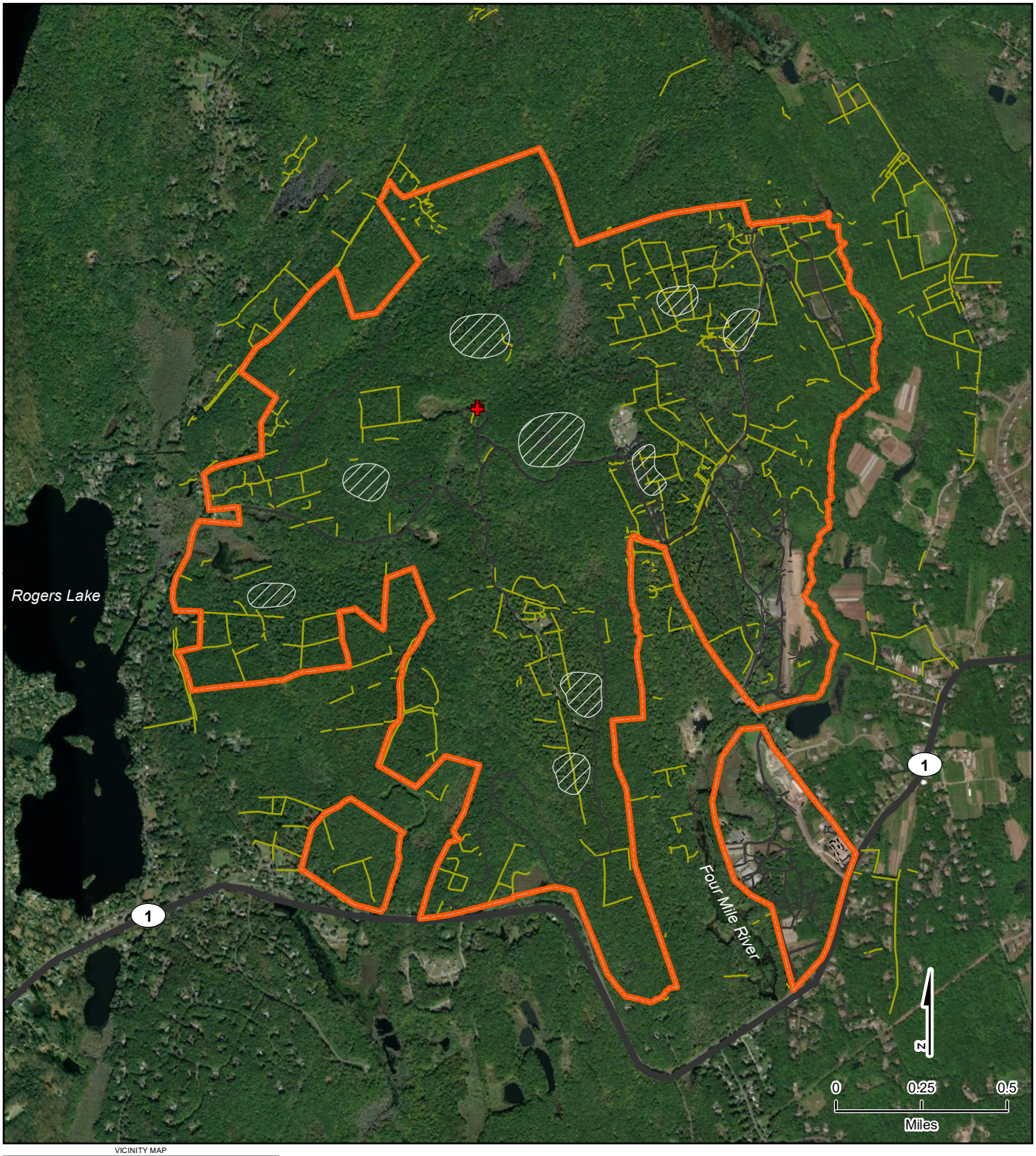

VICINITY MAP

Legend

- Installation Boundary
- Training Location
- Highway
- Unpaved Road
- Stone walls
- Trails
- Demo Range and Impact

Figure 1-2
Stones Ranch Military Reservation
CTARNG INRMP
New London County, CT

Map Date: 8/11/2020
Source: Esri, DeLorme, HERE, USGS, et.al 2020
Projection: WGS 1984 UTM Zone 18N

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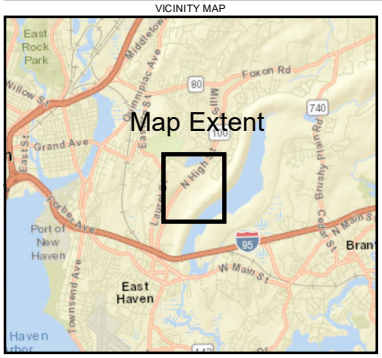
VICINITY MAP



Legend

- Installation Boundary
- Range
- Range Berm

Figure 1-3
East Haven Rifle Range
CTARNG INRMP
New Haven County, CT

Map Date: 8/11/2020
Source:
Projection: WGS 1984 UTM Zone 18N

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2. GENERAL INFORMATION

2.1 PURPOSE AND SCOPE

This INRMP Update has been developed for CTARNG in accordance with Army Regulation (AR) 200-1 – *Environmental Protection and Enhancement*, Department of Defense (DoD) Manual (DoDM) 4715.03 – *Integrated Natural Resources Management Plan Implementation Manual*, and DoD Instruction (DoDI) 4715.03 – *Natural Resources Conservation Program*, the *Army National Guard (ARNG) Installations and Environment (I&E) Directorate Policy for Integrated Natural Resource Management Plans (INRMP)* and the provisions of the Sikes Act, as amended (16 U.S.C. §670a et seq.). The original INRMP for these two CTARNG sites was developed in 2001, and the last INRMP Update was completed in 2006.

This INRMP Update provides SRMR and EHRR with a description of the installation (e.g., location, history, and mission), information about the surrounding physical and biotic environment, and an assessment of the impacts on natural resources as a result of mission activities. Furthermore, the INRMP recommends various management practices in compliance with federal, state, and local standards designed to mitigate negative impacts and enhance the positive effects of the installation's mission on local ecosystems.

This INRMP integrates all aspects of natural resource management with the rest of the installation's mission and, therefore, becomes the primary tool for managing the installation's ecosystems while ensuring the successful accomplishments of the military mission at the highest possible levels of efficiency. The INRMP is a guide for the management and stewardship of natural resources present on the installation and enhancement of biodiversity. A multiple-use approach will be implemented to allow for the presence of mission-oriented activities, as well as environmental quality through informed management of natural resources.

Specific management practices identified in this INRMP have been developed to enhance and maintain biological diversity within the installation. Specifically, management practices should:

- Minimize habitat fragmentation and promote the natural pattern and connectivity of habitats
- Protect native species and discourage non-native, invasive species
- Protect and promote rare and ecologically important habitats
- Protect unique sensitive environments
- Maintain or mimic natural processes
- Protect genetic diversity
- Restore species, communities, and ecosystems
- Monitor impacts on biodiversity.

Each of the management strategies described in this plan should be monitored so that modifications can be made during implementation if conditions change. In addition, these management strategies

should be reviewed at every annual INRMP meeting with all signatory agencies to ensure that management practices are addressing current needs and providing appropriate conservation of natural resources.

2.2 MANAGEMENT PHILOSOPHY

Conservation is an integration or blending of natural resources management and preservation designed to maintain ecosystem integrity. This INRMP provides conservation measures and is a dynamic document that will be maintained and adapted, as necessary, to reflect updated natural resources information. The CTARNG Environmental Management Branch is tasked with management, stewardship, protection, and enhancement of biological integrity on its lands. These objectives must be balanced with the overall CTARNG mission to train and equip military units, as well as the state mission to support and train civil authorities. The INRMP serves as the basis for managing natural resources while supporting the military mission of the CTARNG. The INRMP will simultaneously support multiple use and sustainable yield, identifying natural resource inventory and monitoring needs; protecting, enhancing, and restoring fish and wildlife habitat; and enforcing natural resources laws and regulations on CTARNG installations. In order to achieve this management objective, the INRMP incorporates the following concepts:

- ***Sustained Use of Lands for Military Training*—**Sustainable multiple use land management philosophy

- ***Natural Resources Stewardship*—**Maintenance and enhancement of natural resource values and functions

- ***Biodiversity Protection*—**Preservation of ecological diversity

- ***Ecosystem Management*—**Emphasis on community and system level management approach

- ***Adaptive Management*—**Philosophy of natural resource management with the intention of improving management policies and practices by learning from the outcomes of operational programs.

The development and implementation of this INRMP indicate CTARNG's commitment to natural resources. The goal of ecosystem management on military training lands is to ensure that military lands support present and future training requirements while, as much as possible, preserving, improving, and enhancing an ecosystem's characteristics and communities of which it is comprised. Over the long term, that approach will maintain and improve the sustainability and biological function of ecosystems while supporting sustainable economies, human use, and the environment required for realistic military training operations (DoDI 4715.03). The INRMP presents practicable alternatives and recommendations to allow for the protection and enhancement of natural resources and conservation of existing ecosystems, while minimizing impacts and allowing for an enhanced training environment as part of the installation's mission.

The Sikes Act requires the preparation of an INRMP in cooperation with USFWS and the appropriate state fish and wildlife agency (CT DEEP). In addition, it is required that the resulting plan reflects the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources. Appendix S includes consultation with USFWS and CT DEEP.

2.3 AUTHORITY

This INRMP is developed under, and proposes actions in accordance with, the applicable DoD and Army National Guard and National Guard Bureau policies, directives, and instructions. AR 200-1 – *Environmental Protection and Enhancement* provides the necessary direction for preparing an INRMP. Issues are addressed in this plan using guidance provided under legislation, Executive Orders (EOs), Directives, and Instructions that include DoDM 4715.03 – *Integrated Natural Resources Management Plan Implementation Manual*, and DoDI 4715.03– *Natural Resources Conservation Program*, and the provisions of the Sikes Act, as amended (16 U.S.C. §670a et seq.). DoDI 4715.03 provides direction for DoD installations in establishing procedures for an integrated program for multiple-use management of natural resources (including biological and earth resources) on property and lands managed or controlled by DoD. DoDM 4715.03 provides the procedures to prepare, review, update, and implement INRMPs in compliance with the Sikes Act.

2.4 INTEGRATION WITH OTHER PLANS

This INRMP is intended to be compatible with other CTARNG planning documents. In preparing this document, other plans consulted are listed below. These documents can be found as Component Plans provided electronically on the compact disk that accompanies this INRMP.

- ***Forest Management Plan (FMP)***—This plan provides a description of the forest stands at SRMR as well as the health and composition of these stands, and management recommendations for harvest of timber at SRMR (Component Plan A).

- ***Forest Stewardship Plan (FSP)***—Unlike the FMP, which is focused on timber and harvest management, the FSP provides management recommendations for managing forest habitats at SRMR and EHRR for ecosystem health and diversity (Component Plan B).

- ***Integrated Wildland Fire Management Plan (IWFMP)***—This plan provides a summary of the wildland fire program, including fire management strategies, program components, training, techniques, public affairs and agency cooperation, and responsibilities of CTARNG in fire management at SRMR (Component Plan C).

- ***Integrated Pest Management (IPM) Plan***—This plan describes how CTARNG will comply with the requirements of DoDI 4150.07, *DoD Pest Management Program*, and provides guidance for operating and maintaining an effective IPM program at these two installations. The plan also identifies and implements strategies for managing specific pests at the installation and implements the use of both chemical and non-chemical control techniques (Component Plan D).

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3. INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN IMPLEMENTATION

3.1 INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN IMPLEMENTATION

3.1.1 Roles and Responsibilities

The INRMP Program has been organized to ensure the implementation of year-round, cost-effective management activities and projects that meet the requirements of these installations. The various organizations on the installations that are responsible for implementation of the INRMP are described below.

Installation Stakeholders—The development and implementation of the INRMP requires the cooperation and participation of installation stakeholders.

- The Adjutant General of CTARNG has overall responsibility for the preparation and implementation of the INRMP that fulfills both stewardship and legal requirements.

- The Environmental Management Branch, within the Facilities Management Office (FMO) of the State of Connecticut Military Department, is assigned day-to-day responsibility for development and implementation of the INRMP.

- The Natural Resource Manager currently serves as the lead representative for natural resource related issues.

- Training Site Commanders are responsible for providing input to the plan and implementing specific elements of the plan.

The Training Site Commanders are primarily responsible for the scheduling of military training and for the safety of all personnel while training exercises are conducted. In addition, personnel are in charge of maintaining an adequate training environment, which is accomplished through monitoring usage and enforcement of natural resource and land management regulations. The Natural Resource Manager within the Environmental Management Branch is responsible for coordinating activities that affect the installation's natural resources. This involves, but is not limited to, preparing plans, developing projects, conducting field studies, securing permits, providing support and analysis, preparing reports, and facilitating cooperation between military operations and other natural resource agencies at the local, state, and federal levels.

Implementing the SRMR and EHRR INRMP is ultimately the responsibility of the Adjutant General of the CTARNG, and the day-to-day coordination and implementation of the management proposed in the INRMP will be the responsibility of the Natural Resource Manager. The National Guard Bureau is responsible for providing Army funds for natural resources management as programmed and budgeted by CTARNG and submitted to the National Guard Bureau for funding.

External Stakeholders—Implementation of the INRMP also requires coordination with external stakeholders, including the signatory agencies USFWS and CT DEEP. An annual meeting to review the INRMP with these partners is required annually under the Sikes Act. USFWS and CT DEEP are required to be invited to the annual meeting but are not required to attend. Other federal agencies that might have an interest in the management of natural resources at the CTARNG installations covered in this INRMP include the National Marine Fisheries Service, U.S. Coast Guard, Department of Veterans Affairs, the U.S. Army Corps of Engineers (USACE), and the Natural Resources Conservation Service.

In order to supplement staffing to accomplish the implementation of the INRMP and management of natural resources, additional external resources may be used to support the Natural Resources Office. These include:

- Federal agencies (e.g., USFWS, Natural Resources Conservation Service)
- State agencies (CT DEEP)
- Troop labor
- Local and regional Universities
- Conservation groups and nonprofits (e.g., The Nature Conservancy, Audubon Society, and sportsmen's clubs)
- Contractors.

Implementation of a number of projects discussed in this INRMP will require active outside assistance. The outside assistance could come from state and federal agencies, private consortiums and organizations, universities, and contractors. Using these resources is the most efficient and cost-effective method for acquiring expertise on a temporary basis. Some parties will be reimbursed for their assistance, as agreed based on the Memorandum of Understanding and contractual agreements. The level of additional resources necessary to fully implement this INRMP should be assessed during the INRMP annual review process to determine the extent to which outside assistance will be required.

3.1.2 Funding Responsibilities

In 2005, the Department of the Army created the Sustainable Range/Installations Environmental Activities Matrix to realign and clarify funding responsibilities for environmental requirements on ranges and facilities to avoid redundancy and gaps. This guidance shifts funding responsibility for certain Sustainment/Restoration/Modernization and Base Operations Support related range and land use facility requirements from Environmental Programs to proponents. In general, Environmental is the primary funding source for the majority of the requirements related to wetlands, threatened and endangered species, cultural resources, and all environmental plans. Soil erosion/stabilization is shared among the Range, Facilities, and Environmental Programs. Invasive species is largely a Facilities responsibility, as is increased management, care of water and land,

collection and disposal of solid waste, and execution of the pest management activities. Environmental retains the responsibility for developing and coordinating integrated management plans to include the INRMP, Integrated Cultural Resources Management Plan, Forest Plans, and IPM Plan.

The activities specified in the INRMP will require close teamwork among the staffs to ensure sustainability is maintained.

3.1.3 Monitoring Integrated Natural Resources Management Plan Implementation and Effectiveness

A variety of metrics will be used to measure the extent of INRMP implementation, and the effectiveness of the measures implemented. In general, the Natural Resource Manager will be responsible for implementing the goals, objectives, and projects described in this INRMP. The following monitoring criteria have been established for each resource management.

- ***Natural Resources Program Management***—Monitoring criteria will include documented completion of the annual coordination meeting with USFWS and CT DEEP. When the annual INRMP review is conducted, concurrence from the signatory agencies will be obtained, and the INRMP document will be amended accordingly.

- ***Fish and Wildlife Management***—Monitoring criteria will include assessing habitat and wildlife on the installations to ensure healthy populations.

- ***Outdoor Recreation and Public Access to Natural Resources***—Monitoring criteria will include the use of recreational resources, when applicable.

- ***Threatened and Endangered Species and Habitats Management***—Monitoring criteria will include annual updates of the listed rare, threatened, and endangered species or their habitats occurring on the installation. Management actions will be implemented to avoid or minimize impacts to any listed species or habitats.

- ***Water Resource Protection***—Monitoring criteria will include regular monitoring of surface water resources on the installations, as well as inspections of stormwater and erosion and sediment control measures to ensure water quality protection.

- ***Wetland Protection***—Monitoring criteria for wetlands will include assessing the occurrence and function of wetlands and ensuring that actions that affect wetlands are appropriately mitigated in compliance with regulations.

- ***Grounds Maintenance***—Monitoring criteria will include regular assessment of habitat management to ensure it supports native species. Erosion and sedimentation will also be monitored to ensure that problems do not occur.

- ***Forest Management***—Monitoring criteria will include regular surveys to determine the health of the forested habitat throughout the installations and to monitor the use of management tools outlined in the FSP and FMP.

- ***Wildland Fire Management***—If fire management is undertaken, monitoring criteria will include surveys to determine the effectiveness of burns as outlined in the Integrated Wildland Fire Management Plan.

- ***Integrated Pest Management***—Monitoring criteria will include ensuring that IPM practices are incorporated into pest management on the installations. After treatment of invasive species and removal of nuisance species, post-monitoring will be implemented to determine the success of the effort. Monitoring will continue of newly introduced invasive species, when applicable.

- ***Public Outreach—***Monitoring criteria will include assessing the overall success of outreach efforts implemented.

- ***Climate Change***—Monitoring criteria will include assessing the short-term and long-term impacts of climate change and implementing Best Management Practices (BMPs) to mitigate the effects climate change has on CTARNG installations.

3.2 ANNUAL INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN REVIEW AND COORDINATION REQUIREMENTS

Under the requirements of the Sikes Act, this INRMP must be reviewed internally on an annual basis to assess the recommended management practices in terms of their appropriateness for current conditions at these CTARNG installations. Signatory agencies (USFWS and CT DEEP) must be invited to these annual meetings but are not required to attend. Monitoring is a critical component of the INRMP implementation. The Natural Resources Manager would also meet semi-annually with trainers and commanders to discuss the effectiveness of INRMP implementation. Meetings should be held at least once annually to discuss management projects that will be or were carried out, respectively.

3.3 INTEGRATED NATURAL RESOURCES MANAGEMENT PLAN UPDATE AND REVISION PROCESS

This INRMP is in effect from the date that all required signatures have been received; however, the Operational Component Plans must be updated annually during preparation of the installation's environmental budgets. The INRMP will be renewed every 5 years (i.e., 2025, 2030, etc.), unless circumstances arise that would require the plan to be revised more frequently, to update the document with any changes in the military mission or the natural resources of these installations. The INRMP should be updated whenever there is a modification to the installation's missions, or when there is a substantial change to the installation's natural resources.

APPENDICES

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APPENDIX A - REFERENCES

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APPENDIX B – ACRONYMS AND ABBREVIATIONS

°F	Degrees Fahrenheit
AR	Army Regulation
ARNG	Army National Guard
BMP	Best Management Practice
CC	Climate Change
CCMA	Connecticut Coastal Management Act
CGS	Connecticut General Statutes
CT DEEP	Connecticut Department of Energy and Environmental Protection
CTARNG	Connecticut Army National Guard
CWA	Clean Water Act
DoD	Department of Defense
DoDI	Department of Defense Instruction
DoDM	Department of Defense Manual
EHRR	East Haven Rifle Range
EO	Executive Order
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FM	Forest Management
FMO	Facilities Management Office
FSP	Forest Stewardship Plan
FMP	Forest Management Plan
FWM	Fish and Wildlife Management
GM	Grounds Maintenance
I&E	Installations and Environment
INRMP	Integrated Natural Resources Management Plan
IPM	Integrated Pest Management
IWFMP	Integrated Wildland Fire Management Plan
JLUS	Joint Land Use Study
NDDB	Natural Diversity Data Base

OR	Outdoor Recreation and Public Access to Natural Resources
PO	Public Outreach
SRMR	Stone's Ranch Military Reservation
TE	Threatened and Endangered Species and Habitats
UCONN	University of Connecticut
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USFWS	U.S. Fish and Wildlife Service
WFM	Wildland Fire Management
WP	Wetland Protection
WRP	Water Resources Protection

APPENDIX C – INSTALLATION OVERVIEWS

1.1 LOCATION AND AREA

The two CTARNG installations considered in this INRMP are located in southern Connecticut. SRMR is in New London County, and EHRR is in New Haven County (INRMP, Figure 1-1). The following briefly describes these installations:

- ***SRMR*—**This 1,863-acre facility located in East Lyme (INRMP, Figure 1-2). The majority of the installation lies within the town of East Lyme, although portions of the property are in the towns of Lyme and Old Lyme. The site is primarily accessed from Boston Post Road or Stone's Ranch Road, although there are several access points along the installation boundary. The Fourmile River forms the majority of the installation's eastern boundary.

- ***EHRR*—** This 122-acre facility is in southern Connecticut, in East Haven, New Haven County (INRMP, Figure 1-3). The installation is located on North High Street, in the town of East Haven, approximately one mile north of Interstate-95. The unpopulated Saltonstall Ridge and Lake Saltonstall is located just east of the installation boundary.

1.2 INSTALLATION HISTORY

There have been no substantive changes to the installation history of these CTARNG installations since the 2006 INRMP.

1.3 MILITARY MISSION

The military mission of SRMR and EHRR has not substantially changed since the 2006 INRMP.

The CTARNG mission includes both federal and state components. The federal mission of the CTARNG focuses on providing trained and equipped units capable of immediate expansion to war strength. The primary state mission is to support civil authorities in the protection of life and property and the preservation of peace, order, and public safety under competent orders from State authorities (INRMP, Figure 1-1). The following briefly describes the military mission of the installations covered by this INRMP:

- ***SRMR*—**The training area at SRMR is a multiuse tactical training area for the CTARNG, consisting of a variety of tactical training areas and ranges, bivouac areas, a land-navigation course, confidence course, leadership reaction course, rappelling tower, demolition range, bridge training facility, diesel fuel point with washrack, ammunition storage facility, and an airstrip and landing points used by rotary wing aircraft (i.e., helicopters). SRMR provides battalion-sized field training exercise/command post exercise, and non-live fire maneuver training areas. Training activities at SRMR include non-mechanized infantry tactical training, engineer, and signal corps training. Light division maneuvering constitutes the majority of the training conducted by CTARNG units. The cantonment area is the primary administrative area for the reservation.

- ***EHRR***—EHRR provides weapons qualification and training for small arms and non-mechanized tactical maneuvering. Facilities at EHRR include rifle and pistol ranges, a bayonet assault course, and support buildings.

The Sikes Act requires that INRMPs provide for "…*no net loss in the capability of military installation lands to support the military mission of the installation*" (16 U.S.C. §670 et seq.). The INRMP enables the installation to meet the requirements of the military mission within the limitations and legal restrictions of the baseline natural resources at CTARNG installations.

Environmental constraints, such as the presence of endangered species, dictate where and when certain types of activities can occur to ensure regulatory compliance and long-term sustainability of natural resources on the installation. However, natural resources are also required to fulfill the training needs of the CTARNG and to support the military mission; these resources are referred to as the missionscape. The missionscape includes all existing habitats at SRMR and EHRR, including those being actively managed to support the dual goals of ecological diversity and training landscape diversity.

1.4 SURROUNDING LAND USE AND COMMUNITIES

These CTARNG sites are located in southern Connecticut in areas with a mix of residential and forested land.

Adjacent lands surrounding SRMR are primarily forested, with rural and residential uses. Along the eastern side of SRMR are some rural, large-lot residential homes, but to the north and west are mostly forests, wetlands, and lakes. The State-owned forests of Beckett Hill State Park Reserve and Nehantic State Forest are to the northwest and northeast, and privately owned forest land comprising the Yale University School of Forestry and Environmental Studies Outdoor Education Center is to the north. To the south and southwest are single-family homes, undeveloped land, and Goodwins Pond (CTARNG 2019).

Land around the EHRR is primarily zoned residential with the exception of some light industrial zoning on the central western boundary (Mead & Hunt and Tetra Tech 2018). Single-family residential homes border the EHRR to the north and west. To the south is a private gun range and an East Haven Police Department facility. The eastern boundary is a wooded area that is part of the Lake Saltonstall Recreation Area owned by the Regional Water Authority (CTARNG 2019).

Because these installations are in proximity to communities and residential areas, the CTARNG collaborated with the towns of East Lyme, Lyme, and Old Lyme on a Joint Land Use Study (JLUS) addressing SRMR (Matrix Design Group 2016). The JLUS identifies measures to enhance current and future compatibility with no net loss to the military mission. No JLUS has been developed for EHRR.

1.5 LOCAL AND REGIONAL NATURAL AREAS

Southern Connecticut provides several regional natural areas, including natural areas that are directly adjacent to the CTARNG installations. Natural areas near SRMR include public and private land. Beckett Hill State Park and Reserve is located northwest of SRMR. Nehantic State

Forest and the Yale Outdoor Education center are both located north of SRMR. EHRR is located adjacent to the Lake Saltonstall Recreation Area and Saltonstall Ridge. Other parks in proximity to EHRR include the Bishop Wood Bird Sanctuary, Quinnipiac Meadows Eugene B. Fargeorge Preserve, and Quinnipiac Ridge.

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APPENDIX D – PROJECT IMPLEMENTATION TABLES AND ANNUAL WORK PLANS

The purpose of this chapter is to present a road map for the execution of specific actions to achieve management goals and objectives identified in this INRMP. These management objectives are identified by the resources in which they fall (Appendices G through S).

Table D-1 summarizes the management actions identified in Appendices G through S for the SRMR and EHRR and propose priorities for their implementation from 2021 through 2025 and beyond. The actions proposed for this INRMP are comprehensive and far reaching and might not be accomplished within the established timelines due to a number of factors (e.g., budget and manpower constraints, wartime tasks). However, their importance to the proper management of the installation's natural resources cannot be understated. Therefore, the management actions presented in this table should be modified as part of the annual review of this INRMP by the INRMP Working Group to ensure that these goals are continually emphasized and accomplished when practicable.

This INRMP reflects the commitment set forth by CTARNG to conserve, protect, and enhance the natural resources present on the installation. This INRMP is the final plan that will direct the natural resources management at the installation from Fiscal Years 2021 through 2025. An ecosystem approach was used to develop the management measures for each resource area. Implementation of the management measures will maintain, conserve, and enhance the ecological integrity of the installation and the biological communities occurring on the installation. In addition, the natural resources management measures described in this plan will protect the installation's ecosystems and their components from unacceptable damage or degradation and identify and restore previously degraded habitats.

Natural resources and land use management issues are not the only factors contributing to the development and implementation of the INRMP. Installation management and other seemingly unrelated issues affect the implementation of this plan. It is of utmost importance to the implementation of this INRMP that installation personnel take "ownership" of the plan (i.e., individual or organizational primary responsibility to implement the INRMP), provide the necessary resources (i.e., personnel and equipment), and allocate the appropriate funding to enact the plan. The Sikes Act requires that an INRMP Working Group be established to aid in the continued development of and commitment to the implementation of this INRMP. The INRMP Working Group should be comprised of key installation personnel, and the signatory agencies (USFWS and CT DEEP). The INRMP Working Group must meeting annually in person to complete an annual update of the INRMP.

Any requirement for the obligation of funds for projects in this INRMP shall be subject to the availability of funds appropriated by Congress, and none of the proposed projects shall be interpreted to require obligation or payment of funds in violation of any applicable federal law. Implementation of the actions and projects described in this INRMP are guided by how budget priorities are assessed for environmental work on DoD installations. This is described in DoDI 4715.03, *Natural Resources Conservation Program*, which implements policy, assigns responsibilities, and prescribes procedures for the integrated management of natural and cultural resources on property under DoD control.

Funding for the preparation and implementation of this INRMP, as required by the Sikes Act, is a high priority; however, the reality is that not all of the projects and programs identified in this INRMP will receive immediate funding. As such, these programs and projects have been placed into four priority-based categories:

Priority 0 – Day-to-day recurring projects
Priority 1 – High priority projects
Priority 2 – Medium importance projects
Priority 3 – Low importance projects.

The prioritization of the projects is based on need, and need is based on a project's importance in moving the natural resources management program closer toward successfully achieving its goal. DoDI 4715.03 defines recurring and non-recurring conservation requirements as follows:

RECURRING AND NON-RECURRING CONSERVATION REQUIREMENTS

Priority 0: Recurring Natural Resources Conservation Management Requirements
a. Administrative, personnel, and other costs associated with managing the DoD Natural Resources Conservation Program that are necessary to meet applicable compliance requirements in federal and state laws, regulations, Eos, and DoD policies, or in direct support of the military mission. b. DoD components shall give priority to recurring natural resources conservation management requirements associated with the operation of facilities, installations, and deployed weapons systems. These activities include day-to-day costs of sustaining an effective natural resources management program, and annual requirements, including manpower, training, supplies, permits, fees, testing and monitoring, sampling and analysis, prescribed fire, invasive/noxious species control, reporting and recordkeeping, maintenance of natural resources conservation equipment, and compliance self-assessments.
Priority 1 (High): Non-Recurring Natural Resources Management Requirements. Current Compliance.
Includes installation projects and activities to support: a. Installations currently out of compliance (e.g., received an enforcement action from an authorized federal or state agency or local authority). b. Signed compliance agreement or consent order. c. Meeting requirements with applicable federal and state regulations, and standards. d. Immediate and essential maintenance of operational integrity or military mission sustainment. e. Projects or activities that will be out of compliance if not implemented in the current program year including the following:

RECURRING AND NON-RECURRING CONSERVATION REQUIREMENTS

Priority 1 (High): Non-Recurring Natural Resources Management Requirements. Current Compliance (continued)

i. Environmental analyses for natural resources conservation projects, and monitoring and studies required to assess and mitigate potential impacts of the military mission on conservation resources.

ii. Planning documentation, master plans, compatible development planning, and INRMPs.

iii. Natural resources planning-level surveys.

iv. Reasonable and prudent measures included in incidental take statements of Biological Opinions; biological assessments; surveys; monitoring; reporting of assessment results; conservation measures per informal consultation, or habitat protection for listed, at-risk, and candidate species so that proposed or continuing actions can be modified in consultation with the USFWS or National Marine Fisheries Service.

v. Mitigation to meet existing regulatory permit conditions or written agreements.

vi. Non-point source pollution or watershed management studies or actions needed to meet compliance dates cited in approved state coastal non-point source pollution control plans, as required to meet consistency determinations consistent with Coastal Zone Management.

vii. Wetlands delineations required for permitting or part of a planning level survey that are critical for the prevention of adverse impacts on wetlands, so that continuing actions can be modified to ensure mission continuity.

Compliance with missed deadlines established in DoD-executed agreements.

Priority 2 (Medium): Non-Recurring Natural Resources Management Requirements. Maintenance Requirements.

Includes those projects and activities needed to meet an established deadline beyond the current program year and maintain compliance. Examples include the following:

a. Compliance with future deadlines.

b. Conservation, geographic information system mapping, and data management to comply with federal, state, and local regulations; Eos; and DoD policy.

c. Efforts undertaken in accordance with non-deadline specific compliance requirements of leadership initiatives.

d. Wetlands enhancement to minimize wetlands loss and enhance existing degraded wetlands and wetland delineations not required for permitting or as part of a Planning Level Survey.

e. Conservation recommendations in biological opinions issued pursuant to the Endangered Species Act.

RECURRING AND NON-RECURRING CONSERVATION REQUIREMENTS

Priority 3 (Low): Non-Recurring Natural Resources Management Requirements. Enhancement Actions Beyond Compliance.
Includes those projects and activities that enhance conservation resources or the integrity of the installation's mission or are needed to address overall environmental goals and objectives, but are not specifically required by law, regulation, or EO, and are not of an immediate nature. Examples include: a. Community outreach activities, such as International Migratory Bird Day, Earth Day, National Public Lands Day, Pollinator Week, and Arbor Day activities. b. Educational and public awareness projects, such as interpretive displays, oral histories, Watchable Wildlife areas, nature trails, wildlife checklists, and conservation teaching materials. c. Restoration or enhancement of natural resources when no specific compliance requirement dictates a course, or timing of action. d. Management and execution of volunteer and partnership programs.

Table D-1 Final Implementation Table. Summary of CTARNG Management Actions 2021-2025

Installation	Objective No.	Projects	Priority Level	2021	2022	2023	2024	2025	Estimated Cost	Estimated Hours	Notes (include actions and dates)
Natural Resources Program Management (NRP) – Appendix G											
SRMR and EHRR	NRP – 1.1.1	Continue ongoing funding for the Natural Resource Manager Position	0 (Recurring)	X	X	X	X	X			
SRMR and EHRR	NRP – 1.2.1	Provide resources to allow natural resource personnel to attend local and national conferences, such as the annual National Military Fish and Wildlife Association Training Workshop or applicable natural resource management courses, and other relevant conferences.	0 (Recurring)	X	X	X	X	X			
SRMR and EHRR	NRP – 1.2.2	Continue to provide training for other personnel, including annual training on natural resources for the Range Safety Officers.	0 (Recurring)	X	X	X	X	X			
SRMR and EHRR	NRP – 2.1.1	Continue to work with CT DEEP for natural resources management and surveys, including ongoing bat surveys and other flora and fauna surveys.	2 (Medium)	X	X	X	X	X			
SRMR and EHRR	NRP – 2.1.2	Explore opportunities for partnerships with surrounding universities, including Yale, University of Connecticut, and Connecticut College for natural resource-related research or projects	3 (Low)	X		X		X			
SRMR and EHRR	NRP – 3.1.1	Conduct annual internal stakeholder meeting to discuss the operation and management of the INRMP to ensure goals and objectives are understood and to identify changes deemed necessary.	0 (Recurring)	X	X	X	X	X			
SRMR and EHRR	NRP – 3.1.2	Document in writing the items discussed during the meeting and send to attendees to confirm in writing what was discussed and what was agreed to.	0 (Recurring)	X	X	X	X	X			
SRMR and EHRR	NRP – 3.2.1	Conduct annual external stakeholder meeting to include USFWS and CT DEEP to discuss progress in regard to projects completed in the preceding year, discuss the need for any updates to goals and objectives and to identify projects to be completed in the coming year.	0 (Recurring)	X	X	X	X	X			
SRMR and EHRR	NRP – 3.2.2	Document in writing the items discussed during the meeting and send to attendees to confirm in writing what was discussed and what was agreed to.	0 (Recurring)	X	X	X	X	X			
SRMR and EHRR	NRP – 3.2.3	Utilize internal and external stakeholder comments to update the INRMP goals and objectives.	0 (Recurring)	X	X	X	X	X			
Fish and Wildlife Management (FWM) – Appendix H											
SRMR	FWM – 1.1.1	Conduct fauna surveys at SRMR including: Conduct ongoing bat surveys; conduct comprehensive reptile and amphibian surveys to gain a better sense of species and populations; conduct migratory bird surveys; conduct a survey of bobcat; conduct a survey of pollinator species in grasslands; conduct updated planning level surveys for other fauna species. These surveys should be conducted in coordination with partners and stakeholders.	1 (High)		X	X					
SRMR	FWM – 1.1.2	Update existing species lists and other flora and fauna resources to account for any updated occurrences or changes in species presence or abundance.	0 (Recurring)	X	X	X	X	X			
SRMR	FWM – 2.1.1	Evaluate the feasibility of creating grassland restoration projects at fallow fields, including the field near Range 203, the former fuel point, and near the former bridge training area, as well as other sites.	2 (Medium)	X	X						
SRMR	FWM – 2.1.2	Design and implement restoration strategies to enhance pollinator and grassland bird habitat at suitable sites, in coordination with other stakeholders.	2 (Medium)			X	X				
SRMR	FWM – 2.1.3	Complete pre-restoration surveys and post-restoration surveys as part of monitoring for the effectiveness of these grassland areas in supporting pollinators. Undertake adaptive management if needed to best support pollinator communities.	2 (Medium)		X			X			
SRMR	FWM – 4.1.1	Identify suitable locations for installing bat boxes, and work with stakeholders and the public (if feasible) for the building and installation of these boxes. Explore whether boxes could be constructed and installed in cooperation with a scout troop or other local community group.	3 (Low)	X							
SRMR	FWM – 4.1.2	Identify suitable locations for installing wood duck boxes, and work with stakeholders and the public (if feasible) for the building and installation of these boxes. Explore whether boxes could be constructed and installed in cooperation with a scout troop or other local community group.	3 (Low)	X							
SRMR	FWM – 4.2.1	Work with CT DEEP to determine the feasibility of turning the root cellar into a bat hibernaculum. If the root cellar is determined to be suitable habitat, develop it into a hibernaculum.	2 (Medium)			X	X	X			
EHRR	FWM – 5.1.1	Evaluate the feasibility of creating grassland restoration projects at fallow fields and other sites.	2 (Medium)	X	X						

Table D-1 Final Implementation Table. Summary of CTARNG Management Actions 2021-2025

Installation	Objective No.	Projects	Priority Level	2021	2022	2023	2024	2025	Estimated Cost	Estimated Hours	Notes (include actions and dates)
EHRR	FWM – 5.1.2	Design and implement restoration strategies to enhance pollinator and grassland bird habitat at suitable sites, in coordination with other stakeholders.	2 (Medium)			X	X				
EHRR	FWM – 5.1.3	Complete pre-restoration surveys and post-restoration surveys as part of monitoring for the effectiveness of these grassland areas in supporting pollinators. Undertake adaptive management if needed to best support pollinator communities.	2 (Medium)		X			X			
EHRR	FWM – 6.1.1	Undertake measures in the FSP to support forest habitat health, as outlined in the Forest Management goals (Appendix N).	2 (Medium)	X	X	X	X	X			
EHRR	FWM – 7.1.1	Identify suitable locations for installing bat boxes, and work with stakeholders and the public (if feasible) for the building and installation of these boxes. Explore whether boxes could be constructed and installed in cooperation with a scout troop or other local community group.	3 (Low)	X							
EHRR	FWM – 7.1.2	Identify suitable locations for installing wood duck boxes, and work with stakeholders and the public (if feasible) for the building and installation of these boxes. Explore whether boxes could be constructed and installed in cooperation with a scout troop or other local community group.	3 (Low)	X							
EHRR	FWM – 8.1.1	Conduct fauna surveys at EHRR including: conduct ongoing bat surveys; conduct migratory bird surveys; conduct comprehensive reptile and amphibian surveys to gain a better sense of species and populations; conduct a survey of bobcat; conduct a survey of pollinator species in grasslands; conduct updated planning level surveys for other fauna species. These surveys should be conducted in coordination with partners and stakeholders, including CT DEEP.	1 (High)		X	X	X				
EHRR	FWM – 8.1.2	Update existing species lists and other flora and fauna resources to account for any updated occurrences or changes in species presence or abundance.	0 (Recurring)	X	X	X	X	X			
Outdoor Recreation and Public Access to Natural Resources (OR) – Appendix I											
SRMR	OR – 1.1.1	Investigate the feasibility of initiating an internal (retired and active duty CTARNG members only) hunting program for white-tailed deer. Such a program would require less of a management effort than a public program.	1 (High)	X	X						
SRMR	OR – 1.1.2	Work with CT DEEP to develop the internal hunting program, including season, areas permitted for hunting, enforcement, and limits.	1 (High)	X	X						
SRMR	OR – 1.1.3	Investigate the potential to implement the hunting program using an electronic system to track hunters on the installation, such as iSportsman.	2 (Medium)		X	X					
Management of Threatened and Endangered Species and Habitats (TE) – Appendix J											
SRMR	TE – 1.1.1	Coordinate with CT DEEP to conduct annual bat monitoring at SRMR.	0 (Recurring)	X	X	X	X	X			
SRMR	TE – 1.1.2	Working with CT DEEP, determine the frequency at which surveys for listed bats are required, and continue a partnership to complete these surveys at SRMR.	2 (Medium)	X	X						
SRMR	TE – 1.1.3	Continue to implement vegetation management measures to support the northern long-eared bat and to remain in compliance with regulatory guidance on vegetation management for this species.	1 (High)	X	X	X	X	X			
SRMR	TE – 1.2.1	Conduct comprehensive threatened and endangered species surveys for both federally and state protected species at SRMR.	1 (High)	X							
SRMR	TE – 1.2.2	Undertake habitat restoration and enhancement to support state listed plant species, including wetland, shoreline, and riverine enhancement and restoration.	2 (Medium)		X	X					
SRMR	TE – 1.2.3	Undertake habitat restoration and enhancement to support state listed bird species, including wetland enhancement and measures to enhance forest and forest edge habitat.	2 (Medium)		X	X	X				
EHRR	TE – 2.1.1	Coordinate with CT DEEP to conduct bat monitoring at EHRR in areas where buildings may provide roosting sites.	0 (Recurring)	X	X	X	X	X			
EHRR	TE – 2.1.2	Working with CT DEEP, determine the frequency at which surveys for listed bats are required, and continue a partnership to complete these surveys at EHRR.	2 (Medium)	X	X	X					
EHRR	TE – 2.1.3	Continue to implement vegetation management measures to support the northern long-eared bat and to remain in compliance with regulatory guidance on vegetation management for this species.	1 (High)	X	X	X	X	X			
EHRR	TE – 2.2.1	Conduct annual surveys of eastern box turtle and habitat management to support box turtles.	2 (Medium)		X	X					
EHRR	TE – 2.2.2	Continue mowing practices to minimize impacts to box turtles and promote nesting habitat.	0 (Recurring)	X	X	X	X	X			

Table D-1 Final Implementation Table. Summary of CTARNG Management Actions 2021-2025

Installation	Objective No.	Projects	Priority Level	2021	2022	2023	2024	2025	Estimated Cost	Estimated Hours	Notes (include actions and dates)
EHRR	TE – 2.2.3	Undertake grassland restoration measures outlined in Fish and Wildlife Management (Appendix H) to support eastern box turtles.	2 (Medium)			X	X	X			
EHRR	TE – 2.3.1	Conduct seasonal surveys to track the plantain population and ensure no population-level impacts are occurring.	0 (Recurring)	X	X	X	X	X			
EHRR	TE – 2.3.2	Clear encroaching invasive vegetation, including common mugwort, from known populations of sweet-scented Indian plantain to protect populations.	2 (Medium)	X	X	X	X	X			
EHRR	TE – 2.3.3	Work with the Native Plant Trust's New England Plant Conservation Program to determine if seed collection from sweet scented Indian plantain populations at EHRR is feasible and implement a seed collection strategy if feasible.	2 (Medium)				X	X			
EHRR	TE – 2.3.4	Install enclosures around known individuals of sweet-scented Indian plantain to prevent browse and trampling and install barricades around known populations along the right-of-way to prevent damage.	2 (Medium)	X	X	X	X	X			
EHRR	TE – 2.4.1	Develop and implement a genetic study of northern leopard frogs at EHRR to determine how the genetics of the EHRR population fit within the larger regional genetic pool. Coordinate with regional researchers and CT DEEP on study design and implementation.	2 (Medium)			X	X	X			
EHRR	TE – 2.5.1	Conduct threatened and endangered species surveys for both federally and state protected species at EHRR.	1 (High)	X							
EHRR	TE – 2.5.2	Enhance habitat, including meadow habitat, to support state listed bird species, including the eastern meadowlark. Determine areas suitable to implement restoration and habitat improvement projects.	2 (Medium)			X	X				
Water Resources Protection (WRP) – Appendix K											
SRMR	WRP – 1.1.1	Identify culverts for replacement that are failing or inadequately sized and develop a plan for procuring funding for these projects.	2 (Medium)	X	X						
SRMR	WRP – 1.1.2	Develop a design for the identified culvert replacement projects at SRMR, obtain the necessary permits, and install culverts.	2 (Medium)		X	X	X				
SRMR	WRP – 1.1.3	Monitor culverts once they are installed.	2 (Medium)		X		X	X			
SRMR	WRP – 1.2.1	Continue to identify areas where road and trail stabilization is needed to prevent erosion and implement BMPs to minimize erosion.	0 (Recurring)	X	X	X	X	X			
SRMR	WRP – 1.2.2	Install riprap in areas where it is needed to prevent erosion and protect shoreline and streambank resources.	2 (Medium)	X	X	X	X	X			
SRMR	WRP – 1.3.1	Implement procedures in the Stormwater Pollution Prevention Plan and maintain compliance with all applicable state and federal regulations for stormwater and water quality.	1 (High)	X	X	X	X	X			
EHRR	WRP – 2.1.1	Continue to maintain and enhance the riparian buffer along the Farm River. In areas within the right-of-way not managed by CTARNG, coordinate the protection of water resources.	0 (Recurring)	X	X	X	X	X			
EHRR	WRP – 2.1.2	Install riprap in areas where it is needed to prevent erosion and protect shoreline and streambank resources.	2 (Medium)	X	X	X	X	X			
EHRR	WRP – 2.1.3	Continue to identify areas where erosion presents a potential issue to water quality and implement BMPs to minimize erosion.	2 (Medium)	X	X	X	X	X			
EHRR	WRP – 2.2.1	Implement procedures in the Spill Prevention Control and Countermeasures Plan and maintain compliance with all applicable state and federal regulations for stormwater and water quality.	1 (High)	X	X	X	X	X			
Wetland Protection (WP) – Appendix L											
SRMR	WP – 1.1.1	Complete a planning-level survey of wetlands at SRMR and an assessment of wetland functions and values to characterize wetlands at SRMR.	2 (Medium)		X	X					
SRMR	WP – 1.1.2	Complete a survey to assess vernal pools at SRMR, and implement adaptive management based on this assessment, if needed.	2 (Medium)		X	X					
SRMR	WP – 1.1.3	Manage invasive species in wetlands at SRMR to improve wetland function.	2 (Medium)	X		X		X			

Table D-1 Final Implementation Table. Summary of CTARNG Management Actions 2021-2025

Installation	Objective No.	Projects	Priority Level	2021	2022	2023	2024	2025	Estimated Cost	Estimated Hours	Notes (include actions and dates)
SRMR	WP – 1.1.4	Assist personnel requiring permits to impact Waters of the U.S., including wetlands in the preparation of permit application documents.	0 (Recurring)	X	X	X	X	X			
EHRR	WP – 2.1.1	Complete a planning level survey of wetlands at EHRR and an assessment of wetland functions and values to characterize wetlands at EHRR.	2 (Medium)		X	X					
EHRR	WP – 2.1.2	Complete a survey to assess vernal pools at EHRR, and implement adaptive management based on this assessment, if needed.	2 (Medium)		X	X					
EHRR	WP – 2.1.3	Manage invasive species in wetlands at EHRR to improve wetland function.	2 (Medium)		X		X				
EHRR	WP – 2.1.4	Assist personnel requiring permits to impact Waters of the U.S., including wetlands in the preparation of permit application documents.	0 (Recurring)	X	X	X	X	X			
Grounds Maintenance (GM) – Appendix M											
SRMR	GM – 1.1.1	Mow grasslands at SRMR once in the late summer to support grassland birds, including migratory bird species. This would allow potentially nesting birds to complete their breeding and allow young to fledge.	0 (Recurring)	X	X	X	X	X			
SRMR	GM – 1.1.2	Minimize erosion along roadways and in other areas where erosion presents an impact to natural resources. Identify and repair problem erosional areas.	2 (Medium)	X	X	X	X	X			
EHRR	GM – 2.1.1	Mow grasslands at EHRR to support grassland birds, migratory birds, and eastern box turtle habitat. Develop best management practices for mowing to support these species.	0 (Recurring)	X	X	X	X	X			
Forest Management (FM) – Appendix N											
SRMR	FM – 1.1.1	Complete a timber cruise to assess changes in stands since the 2006 FMP was prepared, including changes in acreage, composition, and health.	2 (Medium)	X	X						
SRMR	FM – 1.1.2	Integrate the results of the timber cruise into the FMP and FSP and adapt management recommendations if necessary.	2 (Medium)			X	X				
SRMR	FM – 1.2.1	Implement the FMP and FSP for management of forest resources.	2 (Medium)	X	X	X	X	X			
SRMR	FM – 1.2.2	Ensure that the FMP and FSP are updated every five years, or when changes in the mission or resource management necessitate an update to these plans.	0 (Recurring)				X				
EHRR	FM – 2.1.1	Complete a forest assessment to better understand the acreage, composition, and health of the forested stands at EHRR.	2 (Medium)	X	X						
EHRR	FM – 2.1.2	Integrate the results of this assessment into the FSP and adapt management recommendations if necessary.	2 (Medium)			X	X				
EHRR	FM – 2.2.1	Implement the FSP for management of forest resources at EHRR.	2 (Medium)	X	X	X	X	X			
EHRR	FM – 2.2.2	Ensure that the FSP is updated every five years, or when changes in the mission or resource management necessitate an update to the FSP.	0 (Recurring)				X				
Wildland Fire Management (WFM) – Appendix O											
SRMR	WFM – 1.1.1	Update the IWFMP to ensure it is current and that management practices and goals are consistent with those developed in the INRMP and other management documents. This document should outline the specific guidance, procedures, and protocols in wildfire management and the planning and operating procedures involved with prescribed burning.	1 (High)		X						
SRMR	WFM – 2.1.1	Complete a study of fuels and fire danger at SRMR. If determined to be appropriate, develop protocols in the IWFMP to address fuel hazards and fire danger concerns through prescribed burning.	2 (Medium)	X	X						
SRMR	WFM – 2.2.1	Fund prescribed burning for habitat maintenance, including the purchase of needed equipment for prescribed burning and fire management, and necessary training.	2 (Medium)			X	X	X			
EHRR	WFM – 3.1.1	Update the IWFMP to ensure it is current and that management practices and goals are consistent with those developed in the INRMP and other management documents. This document should outline the specific guidance, procedures, and protocols in wildfire management and the planning and operating procedures involved with prescribed burning.	1 (High)		X						

Table D-1 Final Implementation Table. Summary of CTARNG Management Actions 2021-2025

Installation	Objective No.	Projects	Priority Level	2021	2022	2023	2024	2025	Estimated Cost	Estimated Hours	Notes (include actions and dates)
EHRR	WFM – 4.1.1	Complete a study of fuels and fire danger at EHRR, as well as a study on the feasibility of burning at the site, which is in a more developed area than SRMR. If determined to be appropriate, develop protocols in the IWFMP to address fuel hazards and fire danger concerns through prescribed burning.	2 (Medium)	X	X						
EHRR	WFM – 4.2.1	Fund prescribed burning for habitat maintenance, including the purchase of needed equipment for prescribed burning and fire management, and necessary training.	2 (Medium)			X	X	X			
Integrated Pest Management Program (IPM) – Appendix P											
SRMR	IPM – 1.1.1	Consistent with the IPM Plan, implement invasive species management procedures at SRMR to help prevent the introduction and spread of invasive species.	2 (Medium)	X	X	X	X	X			
SRMR	IPM – 1.1.2	Continue the active management of invasive plant species, including treatment, follow-up, and monitoring.	0 (Recurring)	X	X	X	X	X			
SRMR	IPM – 1.2.1	Conduct baseline surveys to gauge the presence, locations, and abundance of invasive, nuisance, and noxious species.	2 (Medium)				X	X			
SRMR	IPM – 1.2.3	Once noted, target small or newly discovered populations of invasive species with rapid and intensive management actions to prevent the larger introduction or spread of these species.	2 (Medium)				X	X			
SRMR	IPM – 1.3.1	Participate in the 5-year review and update of the IPM Plan to ensure natural resource and other environmental conditions/issues are addressed and review the IPM Plan on a regular basis to ensure that any updates are addressed.	0 (Recurring)	X	X	X	X	X			
EHRR	IPM – 2.1.1	Consistent with the IPM Plan, implement invasive species management procedures at EHRR to help prevent the introduction and spread of invasive species.	2 (Medium)	X	X	X	X	X			
EHRR	IPM – 2.1.2	Continue the active management of invasive plant species, including treatment, follow-up, and monitoring	0 (Recurring)	X	X	X	X	X			
EHRR	IPM – 2.1.3	Evaluate management options for common mugwort in areas where it is encroaching on the known population of sweet-scented Indian plantain.	2 (Medium)	X	X						
EHRR	IPM – 2.2.1	Conduct baseline surveys to gauge the presence, locations, and abundance of invasive, nuisance, and noxious species	2 (Medium)				X	X			
EHRR	IPM – 2.2.2	Once noted, target small or newly discovered populations of invasive species with rapid and intensive management actions to prevent the larger introduction or spread of these species.	2 (Medium)				X	X			
EHRR	IPM – 2.3.1	Participate in the 5-year review and update of the IPM Plan to ensure natural resource and other environmental conditions/issues are addressed and review the IPM Plan on a regular basis to ensure that any updates are addressed.	0 (Recurring)	X	X	X	X	X			
Public Outreach (PO) – Appendix Q											
SRMR and EHRR	PO – 1.1.1	Develop media and news interviews, public meeting materials, and outreach materials to increase the public awareness and knowledge of natural resource management goals and activities at CTARNG installations.	3 (Low)	X	X	X	X	X			
SRMR and EHRR	PO – 1.2.1	Work with the Boy Scouts on projects such as creating bat boxes.	3 (Low)	X							
SRMR and EHRR	PO – 1.2.2	Consider outreach opportunities that relate to migratory birds and public access, including participation in International Migratory Bird Day, Endangered Species Day, Earth Day, National Public Lands Day, Breeding Bird Survey, and the Christmas Bird Count.	3 (Low)			X	X	X			
Climate Change (CC) – Appendix R											
SRMR and EHRR	CC – 1.1.1	Incorporate climate change into research and management objectives to ensure that adaptations are being made to address the effects of climate change.	0 (Recurring)	X	X	X	X	X			

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APPENDIX E – PHYSICAL ENVIRONMENT

There have been no substantive changes to the physical environment at these CTARNG installations since the 2006 INRMP. Below are brief descriptions of the climate, landforms, geology and soils, and hydrology at SRMR and EHRR.

1.1 CLIMATE

There have been no substantive changes to the climate at CTARNG installations since the 2006 INRMP was approved. Connecticut is characterized by a temperate and humid climate. The average January temperature is around 26 degrees Fahrenheit (°F). Summers average between 70 and 75 °F, with occasional heat waves driving the daytime temperatures above 90 °F. The coastal portions of Connecticut, including SRMR and EHRR, have somewhat warmer winters and cooler summers than the interior areas of the state. Precipitation averages between 3 and 4 inches per month and is evenly distributed throughout the year. Precipitation near the coast is generally lower in spring and summer, whereas inland, it is slightly higher in spring and summer. Most of the state receives between 35 and 45 inches of snow each year, but the average snowfall in northwest portions of the state typically exceeds 75 inches. In the past, hurricanes have caused flooding and other damage along the coastline (CTARNG 2006).

1.2 LANDFORMS

There have been no substantive changes to the geology regionally or at CTARNG installations since the 2006 INRMP. Below are brief descriptions of the landforms found at these installations from the 2001 INRMP.

1.2.1 Stone's Ranch Military Reservation

The landscape of SRMR, which has been dramatically altered by glacial activity, encompasses kame terraces, boulder fields, glacially derived wetlands, and sandy outwash plains. Topography at SRMR is extremely variable, with elevations ranging from 100 to 300 feet above sea level.

1.2.2 East Haven Rifle Range

The topography in the western portion of EHRR is relatively flat, with slopes increasing on the eastern portion of the property in the southeastern direction. Elevation at EHRR ranges from approximately 20 feet to approximately 125 feet above sea level.

1.3 GEOLOGY AND SOILS

There have been no substantive changes to the geology or soils regionally or at CTARNG installations since the 2006 INRMP. A brief description of the soils at each installation is provided below.

1.3.1 Stone's Ranch Military Reservation

Soils at SRMR are predominantly upland or non-hydric in nature. Upland soils occupy over 85 percent of SRMR. There are 36 soil types documented at SRMR. Soils in the Charlton-Chatfield complex occupy approximately one-third of the area of SRMR, and Canton and Charlton soils, soils in the Hollis-Chatfield rock outcrop complex, and Paxton and Montauk soils all cover more than 100 acres. These soils are derived from glacial till composed of schist, granite, and gneiss. The majority of hydric soils found at SRMR are Ridgebury, Leicester, and Whitman soils, which are derived from the same glacial till material. Table E-1 provides the soils found at SRMR, and a map of the soils at SRMR is provided on Figure E-1.

Table E-1 Soil Types Found at Stone's Ranch Military Reservation

Map Symbol	Soil Type and Description	Hydric/Non-Hydric	Percent Slope	Acres
29B	Agawam fine sandy loam	Non-hydric	3-8	14.29
61B	Canton and Charlton, very stony	Non-hydric	3-8	112.80
62C	Canton and Charlton, extremely stony	Non-hydric	3-15	113.04
61C	Canton and Charlton, very stony	Non-hydric	8-15	32.53
60D	Canton and Charlton	Non-hydric	15-25	2.49
62D	Canton and Charlton, extremely stony	Non-hydric	15-35	74.81
18	Catden and Freetown soils	Hydric	-	4.18
73C	Charlton-Chatfield complex, very rocky	Non-hydric	3-15	409.34
73E	Charlton-Chatfield complex, very rocky	Non-hydric	15-45	206.57
38C	Hinckley gravelly sandy loam	Non-hydric	3-15	30.93
38E	Hinckley gravelly sandy loam	Non-hydric	15-45	1.47
75C	Hollis-Chatfield-Rock outcrop complex	Non-hydric	3-15	20.88
75E	Hollis-Chatfield-Rock outcrop complex	Non-hydric	15-45	187.73
107	Limerick and Lim	Hydric	-	8.79
34B	Merrimac sandy loam	Non-hydric	3-8	7.84
34C	Merrimac sandy loam	Non-hydric	8-15	0.43
68C	Narragansett silt loam, extremely stony	Non-hydric	3-15	9.42
68D	Narragansett silt loam, extremely stony	Non-hydric	15-25	4.47
74C	Narragansett-Hollis complex, very rocky	Non-hydric	3-15	4.20
21A	Ninigret and Tisbury	Non-hydric	0-5	0.33
86C	Paxton and Montauk, extremely stony	Non-hydric	3-15	64.96
84B	Paxton and Montauk	Non-hydric	3-8	19.37
85B	Paxton and Montauk, very stony	Non-hydric	3-8	36.91
84C	Paxton and Montauk	Non-hydric	8-15	5.94
85C	Paxton and Montauk, very stony	Non-hydric	8-15	10.39
12	Raypol silt loam	Hydric	0-3	3.90
3	Ridgebury, Leicester and Whitman, extremely stony	Hydric	0-3	177.74
103	Rippowam fine sandy loam	Hydric	0-3	26.63
15	Scarboro muck	Hydric	0-3	24.69
23A	Sudbury sandy loam	Non-hydric	0-5	2.15
52C	Sutton fine sandy loam, extremely stony	Non-hydric	2-15	41.37
17	Timakwa and Natchaug soils	Hydric	-	21.84
306	Udorthents-urban land complex	Non-hydric	0-35	82.77
36B	Windsor loamy sand	Non-hydric	3-8	15.51
46B	Woodbridge fine sandy loam, very stony	Non-hydric	2-8	20.35
47C	Woodbridge fine sandy loam, extremely stony	Non-hydric	2-15	63.02
Source: CTARNG 2006.				

1.3.2 East Haven Rifle Range

There are 10 soil types found at EHRR. The Holyoke, Cheshire, and Wethersfield soils at EHRR are derived from glacial till comprised of red sandstone, shale, conglomerate, and basalt rocks, while Branford and Penwood soils are derived from glaciofluvial red sandstone, shale, and conglomerate rocks. The majority of EHRR is occupied by these excessively well drained to well drained soils. Manchester and Penwood soils alone occupy over 50 percent of EHRR. Bash silt loam, which is derived from alluvial material, is the only hydric soil at EHRR. It occupies nearly 15 percent of the installation, primarily along the Farm River and in the northwest corner of the installation. Table E-2 provides the soils found at EHRR, and a map of the soils at EHRR is provided on Figure E-2.

Table E-2 Soil Types Found at East Haven Rifle Range

Map Symbol	Soil Type and Description	Hydric/Non-Hydric	Percent slope	Acres
104	Bash silt loam	Hydric	0-3	17.76
30A	Branford silt loam	Non-Hydric	0-3	4.54
230C	Branford-Urban land complex	Non-Hydric	8-15	0.0001
63C	Cheshire fine sandy loam	Non-Hydric	8-15	6.96
78E	Holyoke-rock outcrop complex	Non-Hydric	15-45	0.92
37C	Manchester gravelly sandy loam	Non-Hydric	3-15	26.26
35A	Penwood loamy sand	Non-Hydric	0-3	12.18
35B	Penwood loamy sand	Non-Hydric	3-8	28.40
308	Udorthents, smoothed	Non-Hydric	0-35	0.98
305	Udorthents-pits complex, gravelly	Non-Hydric	0-80	10.26
87D	Wethersfield loam	Non-Hydric	15-25	13.30
Source: CTARNG 2006.				

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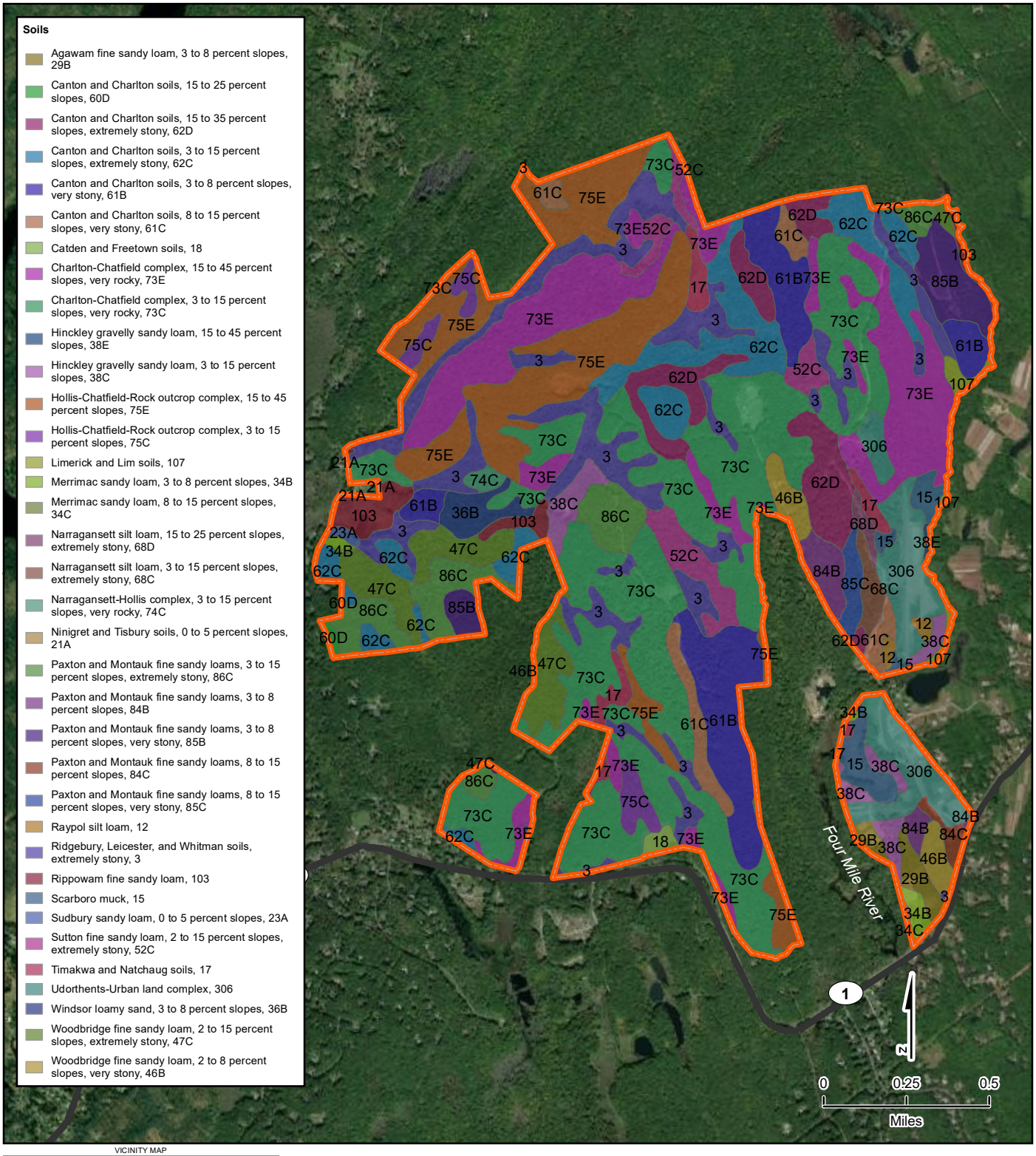

VICINITY MAP

Legend

Installation Boundary

Highway

Figure E-1
Soils Map, SRMR
CTARNG INRMP
New London County, CT

Map Date: 8/11/2020
Source: Esri, DeLorme, HERE, USGS, et.al 2020
Projection: WGS 1984 UTM Zone 18N

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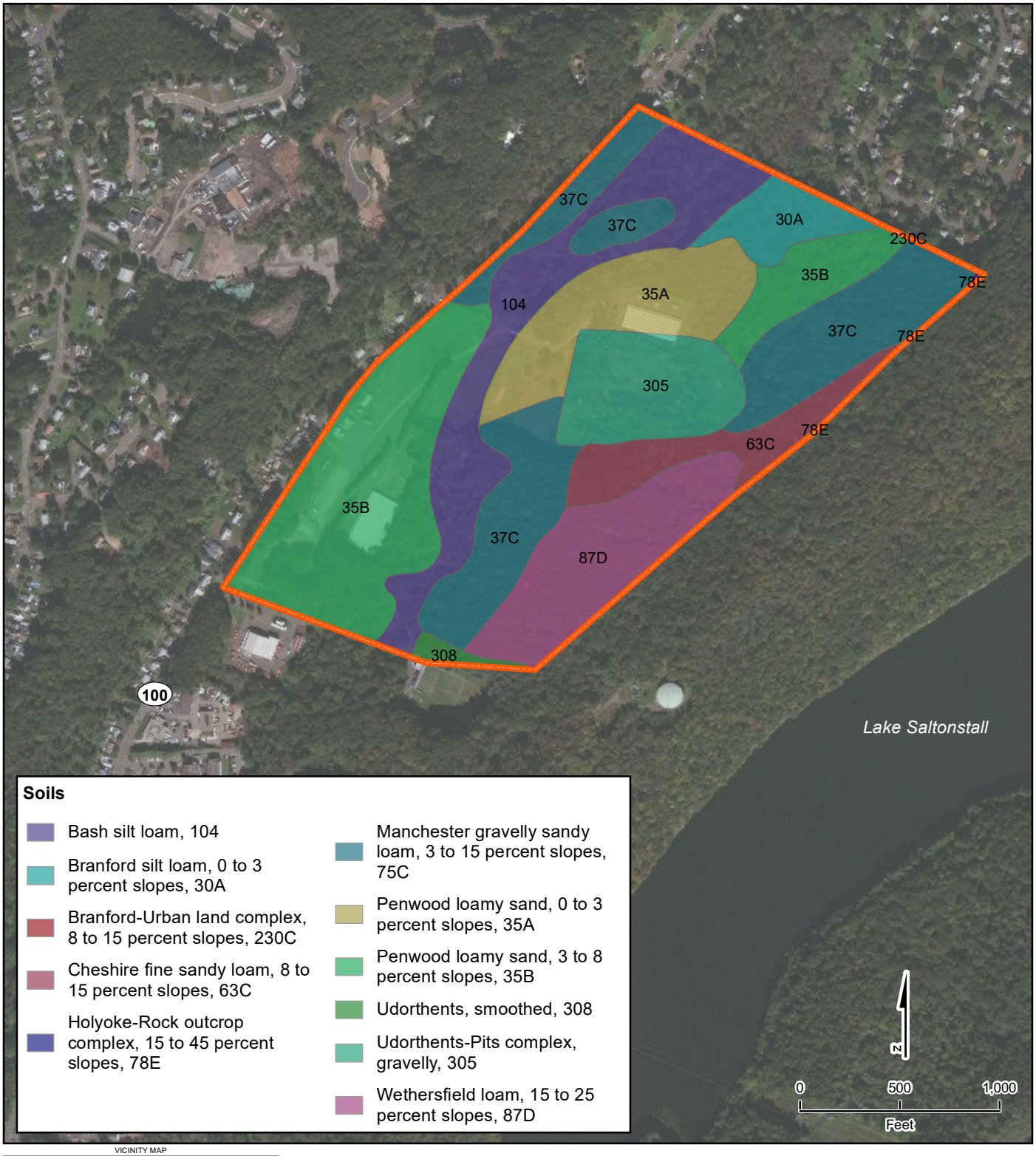
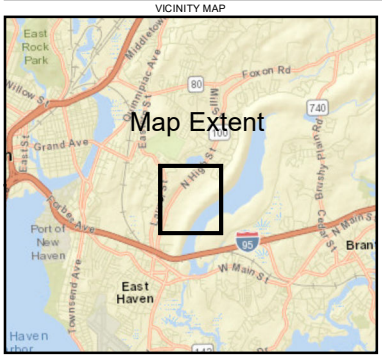


VICINITY MAP



Legend

Installation Boundary

Figure E-2
Soils Map, EHRR
CTARNG INRMP
New Haven County, CT

Map Date: 8/11/2020
Source: Esri, DeLorme, HERE, USGS, et.al 2020
Projection: WGS 1984 UTM Zone 18N

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1.4 HYDROLOGY

These CTARNG installations are located within the Long Island Sound watershed, which includes the drainage basins of the Connecticut, Housatonic, and Thames rivers in Connecticut. Various management programs overseen by CT DEEP are in place to manage and monitor water quality in the Long Island Sound. There have been no substantive changes to the hydrology and aquatic environment at CTARNG installations since the 2006 INRMP. Below are brief descriptions of the landforms found at these installations.

1.4.1 Stone's Ranch Military Reservation

SRMR is located in the Lower Connecticut and Thames watersheds, which are part of the larger Long Island Sound watershed. Surface waters within SRMR include the Fourmile River and Broad Swamp. Fourmile River is the largest water body at SRMR and flows along the eastern border of the installation. Fourmile River is a second order stream through most of the installation, becoming a third order stream near the southern boundary. It has a meandering channel about 20 feet wide. The riverbed consists of a sandy substrate. Waters of Fourmile River are not on the 2018 List of Impaired Waters for Connecticut, and are presumed to meet water quality criteria, which supports potential drinking water supply, fish and wildlife habitat, recreational use, agricultural, industrial supply, and other uses including navigation (CT DEEP 2019a). Fourmile River was considered a Class A stream in 2016, and was fully supporting for fish consumption, but was not assessed for aquatic life or recreation, and was not classified for drinking water (CT DEEP 2016a). Broad Swamp is the largest wetland at SRMR, covering about 15.84 acres on the western border of the installation.

1.4.2 East Haven Rifle Range

EHRR is located in the Lower Connecticut watershed, which is part of the larger Long Island Sound watershed. Surface waters at EHRR include the Farm River, which runs through the property. The Farm River is listed as a Class A Inland Surface Water, and was assessed by CT DEEP in 2016 to be not supporting for aquatic life or recreation, but was fully supporting for fish consumption, and is not classified for drinking water supply (CT DEEP 2016a). Lake Saltonstall is located to the east of the property.

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APPENDIX F – ECOSYSTEMS AND THE BIOTIC ENVIRONMENT

There have been no substantive changes to the ecosystems and biotic environment at CTARNG installations since the 2006 INRMP. Below are brief descriptions of the habitats, federal and state listed species, wetlands, and floodplains.

1.1 HISTORIC ECOLOGICAL COMMUNITIES

Historically, Connecticut's ecological communities have been significantly altered and influenced by human settlements, human land use, and the associated fluctuations of wildlife populations. As in nearly all of New England, Connecticut's forests have grown up from farmland abandoned in the 1800s (Askins 2000). The regrowth of these forests in the last century in combination with increased suburban development has greatly altered wildlife populations. For instance, white-tailed deer (*Odocoileus virginianus*) were uncommon in Connecticut from 1700 to approximately 1900 due to the loss of deer habitat (i.e., field and forest edges and woodlands with an understory of herbaceous vegetation) caused by extensive land clearing for farming. White-tailed deer are abundant in today's fragmented, second growth forests, while grassland bird populations have declined severely as a result of the loss of open meadow habitats. In addition, Canada geese (*Branta canadensis*) have adapted to suburban and urban environments so successfully that resident populations are now viewed as a nuisance (CT DEEP 2020).

The state of Connecticut's ecological communities prior to European settlement is not precisely known. However, much evidence supports the view that the eastern seaboard was not contiguously forested, as is today's common perception. Early explorers and colonists frequently encountered open landscapes that were created by firewood harvesting, clearing for maize fields, and burning to enhance hunting. The population densities of Native Americans were relatively high in certain areas and these populations sometimes used slash and burn techniques to clear land for agriculture, resulting in extensive areas of cleared land in the form of both active and abandoned fields. This suggests that a mosaic of mixed hardwood-oak forests and fields in varying degrees of succession existed on the pre-colonial landscape (Askins 2000).

1.2 ECOSYSTEM CLASSIFICATION

1.2.1 Habitat

1.2.1.1 Stone' Ranch Military Reservation

SRMR is mostly forested with some wetlands and an old rock quarry (Gomez 2006). The site has five major vegetation communities or habitats: dry grassland, wet grassland, dry coniferous forest, dry deciduous forest, and wet deciduous forest (Figure F-1). Dry deciduous forest and wet deciduous forest are the dominant habitat types on SRMR. The wet forests are associated with Fourmile River and its tributaries. The other three vegetation community types are each limited to small areas (less than 50 acres) of contiguous habitat (Hastings 2008; CTARNG 2019).

1.2.1.2 East Haven Rifle Range

More than two-thirds of EHRR is a New Haven County "intact forest," meaning an unbroken natural landscape of forest ecosystem. The installation has four major vegetation communities: dry grasslands, wet shrublands, and dry- and wet-deciduous forests (Figure F-2). Dry grasslands (predominantly mowed lawn areas) and wet-deciduous forest (along the Farm River) are the dominant habitat types (Gomez 2006; CTARNG 2019).

1.2.2 Flora

These installations can be roughly characterized by six broad plant communities: Dry Oak-Mixed Hardwood Forest, Red Oak-Mixed Hardwood Forest, Mixed Mesophytic Northern Hardwood Forest, Aquatic Habitats, Tidal Marsh, and Disturbed Openings. These communities may differ at the installations based on environmental or site conditions such as topography, soils, or slope. Maples and oaks comprised most of the forest overstory, along with hickory and birch (Hastings 2008). Areas of disturbance generally supported a richer diversity of species. Flora surveys of the CTARNG were done in 2006 and 2007. These surveys documented 606 plant species. SRMR had the most species with 397 species representing 253 genera in 88 families, followed by EHRR with 306 species representing 211 genera in 88 families. Across the installations, the most common plant groups were grasses (62 species), asters (56 species), and grasses (62 species). The most common tree type was oak with six species. About 75 percent of species collected were native species; the rest were nonnative species (Hastings 2008; CTARNG 2019). Table F-5 in Attachment F-1 at the end of this appendix presents a full list of plant species identified at the CTARNG installations based on the 2006 and 2007 surveys.

1.2.2.1 Stone's Ranch Military Reservation

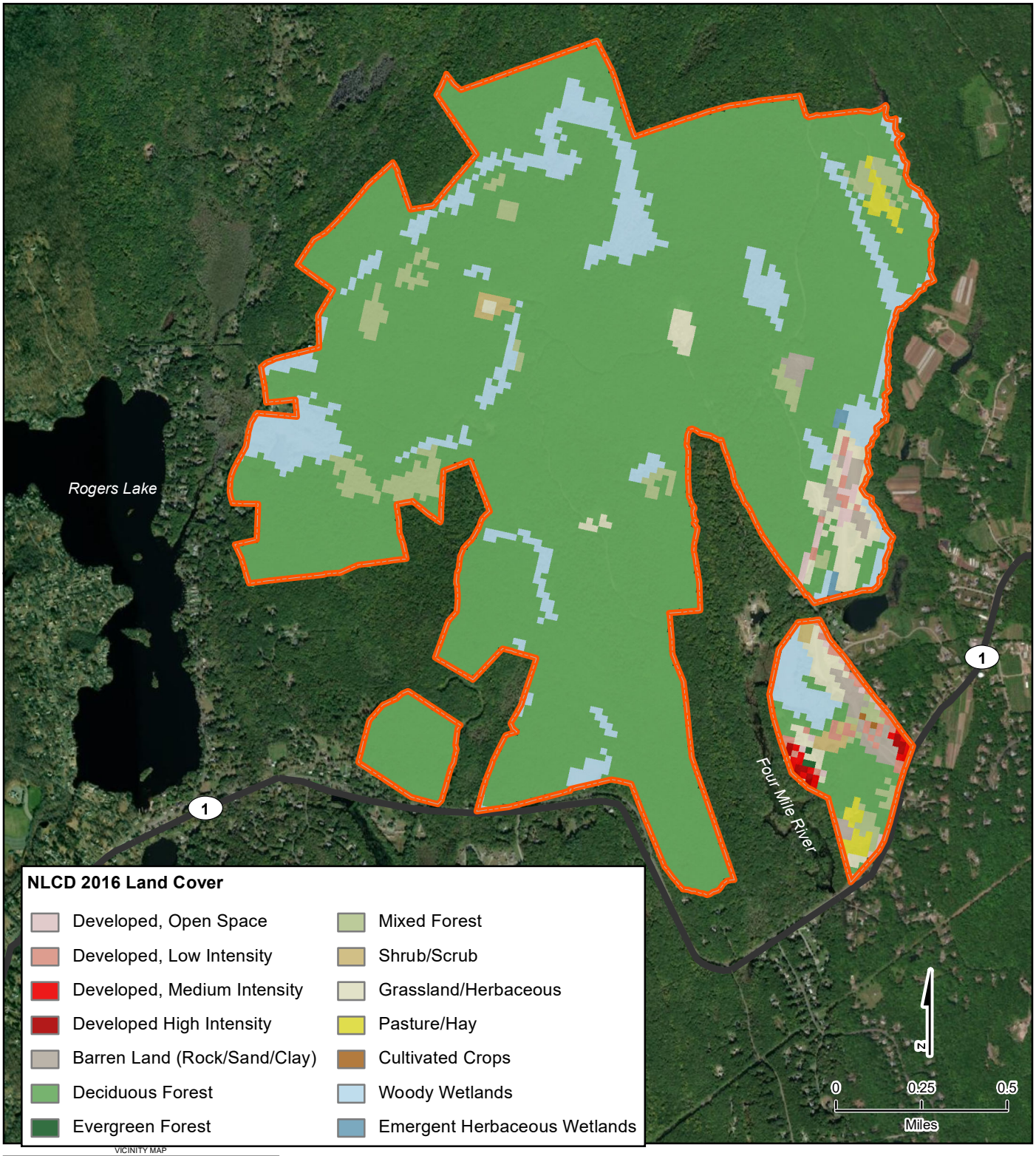
The dominant forest canopy species include red maple (*Acer rubrum*), white oak (*Quercus alba*), chestnut oak (*Q prinus*), and American beech (*Fagus grandifolia*). In addition, vines such as fox grape (*Vitis labrusca*) and Virginia creeper (*Parthenocissus quinquefolia*) are common in forested areas of SRMR. Non-native or invasive plant species, such as autumn olive (*Elaeagnus umbellata*), mugwort (*Artemisia vulgaris*), and Japanese barberry (*Berberis thunbergii*), accounted for approximately 15 percent of the plant species identified at SRMR in the 2006 INRMP.

1.2.2.2 East Haven Rifle Range

Common habitats at EHRR are Dry Oak Mixed Hardwood Forest, Red Oak-Mixed Hardwood Forest, and Disturbed Openings. Dominant species found at EHRR are similar to those found at SRMR, including oak species, maple species, beech, and hickories (*Carya* spp.).

1.2.3 Fauna

Fauna surveys conducted in 2006 at CTARNG indicated that fauna species richness was greatest at SRMR (108 species), and EHRR had 63 species. Birds were the most diverse group, followed by mammals, amphibians, and reptiles (Gomez 2006). Table F-1 lists the number of species of each faunal group observed at each site, with estimated numbers of total species in Connecticut provided for comparison (CTARNG 2019).



Legend

Installation Boundary

Highway

Figure F-1
Vegetative Communities at SRMR
CTARNG INRMP
New London County, CT

Map Date: 8/11/2020
Source: Esri, DeLorme, HERE, USGS, et.al 2020
Projection: WGS 1984 UTM Zone 18N

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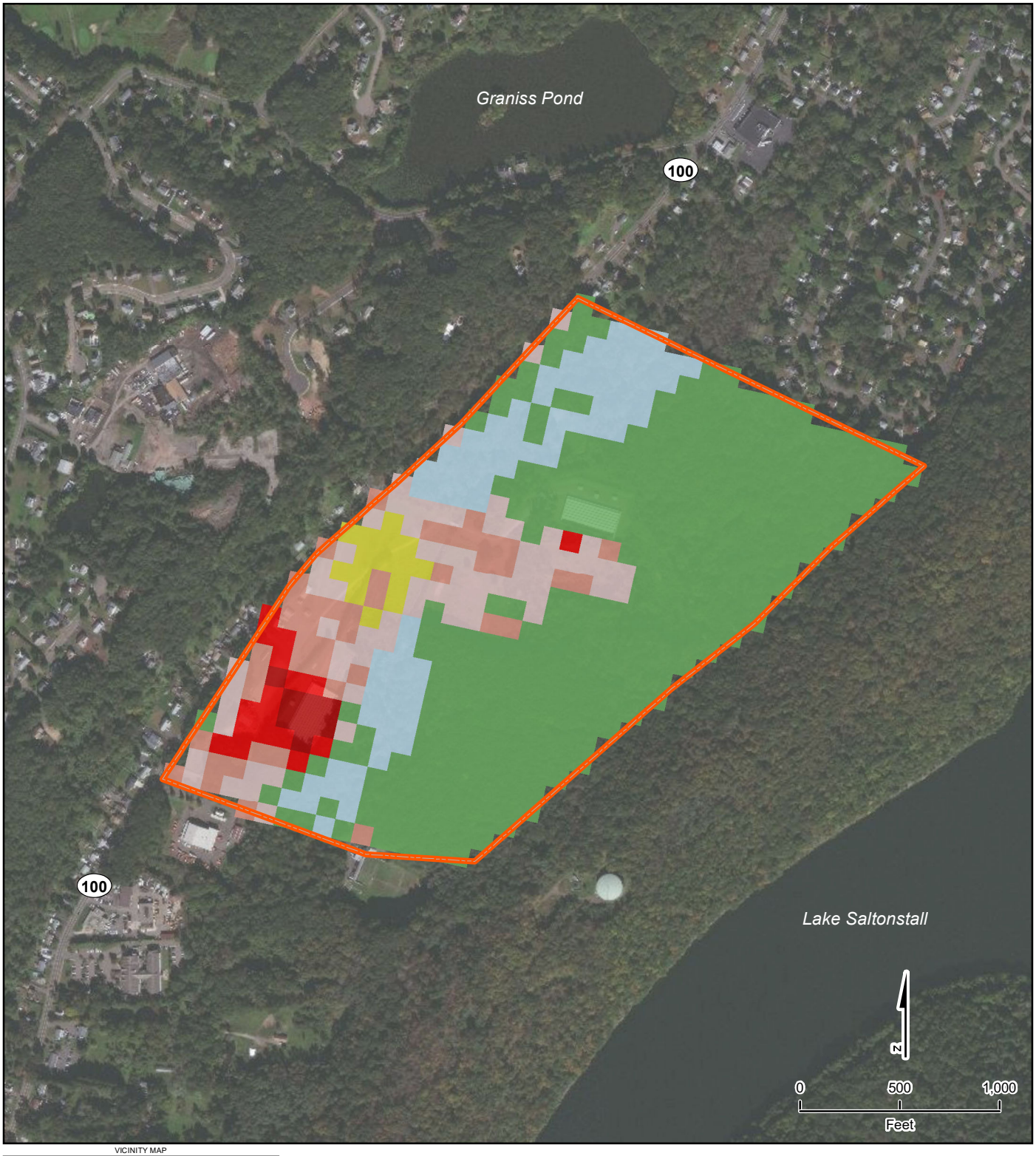
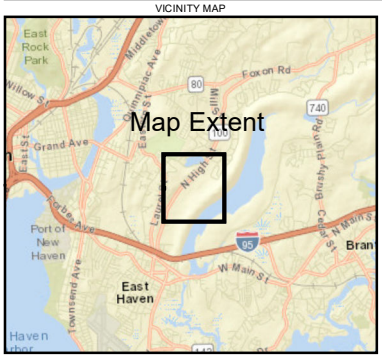


VICINITY MAP



Legend

- Installation Boundary

NLCD 2016 Land Cover

- Developed, Open Space
- Developed, Low Intensity
- Developed, Medium Intensity
- Developed High Intensity
- Deciduous Forest
- Pasture/Hay
- Woody Wetlands

Figure F-2
Vegetative Communities at EHRR
CTARNG INRMP
New Haven County, CT

Map Date: 8/11/2020
Source: Esri, DeLorme, HERE, USGS, et.al 2020
Projection: WGS 1984 UTM Zone 18N

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Table F-1 Number of Faunal Species Observed at CTARNG Installations Compared to Total in Connecticut

Site	Bird	Mammal	Reptile	Amphibian	Total
SRMR	65	21	7	15	10
EHRR	42	11	4	6	63
Connecticut	400	40	28	21	489
Sources: Gomez 2006; Connecticut Wildlife 2018.					

Common bird species observed at the CTARNG sites were American robin (*Turdus migratorius*), common starling (*Sturnus vulgaris*), Northern cardinal (*Cardinalis cardinalis*), wood thrush (*Hylocichla mustelina*), Eastern tufted titmouse (*Baeolophus bicolor*), and gray catbird (*Dumetella carolinensis*). Common mammals observed were the white-footed mouse (*Peromyscus leucopus*), gray squirrel (*Sciurus carolinensis*), and white-tailed deer (*Odocoileus virginianus*). The most frequently observed amphibians were the green frog (*Lithobates clamitans*), wood frog (*Lithobates sylvaticus*), and gray tree frog (*Hyla versicolor*); the eastern garter snake (*Thamnophis sirtalis*) was the most commonly observed reptile species at the training sites (Gomez 2006; CTARNG 2019). Tables F-6 through F-9 in Attachment F-1 at the end of this appendix present full lists of the bird, mammal, amphibian, and reptile species identified at the CTARNG installations based on the 2006 surveys. Surveys for invertebrates have not been conducted at CTARNG installations.

1.2.3.1 Stone's Ranch Military Reservation

Surveys of faunal species were conducted at SRMR in 2006 to characterize the species present on the installation. During the surveys, approximately 108 faunal species were observed, including 65 bird species, 21 mammal species, 7 reptile species, and 15 amphibian species (Gomez 2006). The most abundant bird species observed include black capped chickadee (*Poecile atricapilla*), eastern tufted titmouse, ovenbird (*Seiurus aurocapillus*), pine siskin (*Carduelis pinus*), red-eyed vireo (*Vireo olivaceus*), and wood thrush (Gomez 2006). Plots for mammals were established at SRMR during the 2006 surveys, and 21 mammals were captured, with most common groups being rodents, followed by insectivores and bats, carnivores, and rabbits and deer (Gomez 2008). The more common mammals include white-footed mouse, white-tailed deer, gray squirrel, Elliot's short-tailed shrew (*Blarina hylophaga*), eastern chipmunk (*Tamias striatus*), as well as small-footed myotis (*Myotis leibii*), big brown bat (*Eptesicus fuscus*), and red bat (*Lasiurus borealis*) (Gomez 2006). Acoustic bat surveys were also completed in 2019 at SRMR. Bat species identified included big brown bat, red bat, silver-haired bat (*Lasionycteris noctivagans*), hoary bat (*Lasiurus cinereus*), and little brown bat (*Myotis lucifugus*) (CT DEEP 2019b).

Pitfall traps were used to capture reptiles and amphibians during the 2006 surveys. A total of 7 salamander species, 6 frog species, and 2 toad species were observed, with the most commonly observed species being northern redback salamander, American toad (*Bufo americanus*), green frog, and wood frog (Gomez 2006). Amphibians were most frequently observed in wet forests but were also found in other habitats. Seven reptile species were observed at SRMR, including eastern garter snake, northern ringneck snake (*Diadophis punctatus edwardsii*), black rat snake (*Elaphe obsoleta obsoleta*), racer (*Coluber constrictor*), common snapping turtle (*Chelydra serpentina serpentina*), painted turtle (*Chrysemys picta*), and northern water snake (*Nerodia sipedon sipedon*) (Gomez 2006). During a fish survey of Fourmile River at SRMR in 1993 and 2000 conducted by CT DEEP, six species of fish were encountered. These include American eel (*Anguilla rostrata*),

wild brook trout (*Salvelinus fontinalis*), tessellated darter (*Etheostoma olmstedi*), brown bullhead (*Ameiurus nebulosus*), white sucker (*Catostomus commersonii*), and bluegill (*Lepomis macrochirus*) (Gomez 2006).

1.2.3.2 East Haven Rifle Range

During the 2006 faunal surveys at EHRR, 63 faunal species were observed, including 42 bird, 11 mammal, 4 reptile, and 6 amphibian species (Gomez 2006). Bird species richness at EHRR was found to be much greater during the breeding season, and the most common species observed during the breeding season included American robin, northern cardinal, wood thrush, mourning dove (*Zenaida macroura*), eastern tufted titmouse, and gray catbird. The most commonly observed species in the winter season were the eastern tufted titmouse, blue jay, northern cardinal, and gull species (Gomez 2006). Eleven mammal species were observed at EHRR, with bats and rodents being the most diverse groups, followed by carnivores. The most commonly observed species were white-footed mouse, big brown bat, eastern cottontail, gray squirrel, and raccoon (*Procyon lotor*) (Gomez 2006). Herptile species observed included six amphibian species, including Fowler's toad (*Bufo fowleri*), wood frog, green frog, gray tree frog, spring peeper (*Pseudacris crucifer*) (Gomez 2006). Non-listed reptile species noted at EHRR during the 2006 included northern ring-neck snake, black rat snake, and painted turtle (*Chrysemys picta*) (Gomez 2006).

1.3 THREATENED AND ENDANGERED SPECIES AND SPECIES OF CONCERN

1.3.1 Federally Listed Species

The USFWS Information for Planning and Conservation website identifies two ESA-listed species as potentially occurring at CTARNG installations (USFWS 2020a). These species are shown in Table F-2 and discussed below. The northern long-eared bat (*Myotis septentrionalis*) was identified at SRMR in 2006 during faunal surveys on scanned datasheets (Gomez 2006) and is discussed in greater detail below.

Table F-2 Federally Listed Species with the Potential to Occur at CTARNG Installations

Common Name	Scientific Name	Federal Status	Critical Habitat on CTC?	Potential Location
Northern long-eared bat	*Myotis septentrionalis*	T	No	SRMR*, EHRR
Small whorled pogonia	*Istria medeoloides*	T	No	SRMR

Sources: USFWS 2020a
* Species was noted at SRMR in 2006 faunal surveys (Gomez 2006). Northern long-eared bats have not been identified in surveys since 2006 (CT DEEP 2019b) and no hibernacula are known at CTARNG installations (CT DEEP 2016b).
Note: SRMR= Stone's Ranch, EHRR= East Haven Rifle Range
T = Federally Threatened

1.3.1.1 Northern Long-Eared Bat (*Myotis septentrionalis*)

The northern long-eared bat is listed as threatened under the ESA. It is found across much of the eastern and north-central United States and all Canadian provinces from the Atlantic Coast west to the southern Northwest Territories and eastern British Columbia (USFWS 2020b). During summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities, or in

crevices of both live and dead trees. It has been found, although rarely, roosting in structures like barns and sheds. Northern long-eared bats are active from late spring to early fall and spend winter hibernating in caves and mines. They typically use large caves or mines with large passages and entrances, constant temperatures, and high humidity with no air currents. Northern long-eared bats emerge at dusk. They fly through the understory of forested hillsides and ridges feeding on insects (USFWS 2020b). Faunal surveys conducted in 2006 noted the capture of a single northern long-eared bat at SRMR on the datasheets (Gomez 2006). Acoustic surveys for bat species were completed at CTARNG installations in 2019 by CT DEEP. The northern long-eared bat was not recorded during these surveys (CT DEEP 2019b). This report noted that the apparent absence of northern long-eared bats at Stone's Ranch was most likely a consequence of their population declines due to white-nose syndrome and not the lack of suitable habitat (CT DEEP 2019b). In addition, no known hibernacula are known in the counties where CTARNG installations occur (CT DEEP 2016b). Overall, species can be difficult to detect, and management of natural resources at CTARNG is undertaken in accordance with the regulations to protect this species.

1.3.1.2 Small Whorled Pogonia (*Isotria medeoloides*)

The small whorled pogonia is an ESA-listed threatened plant species that is a member of the orchid family (USFWS 2016a, 2020c). It is widely distributed but rare in 18 eastern U.S. states and Ontario, Canada. Populations are typically small with less than 20 plants. It usually has a single stem that grows to 10–14 inches tall and has a whorl of five or six leaves near the top of the stem. One or two greenish-yellow flowers appear above the stem in May or June. The fruit appears later in the year. It grows in aged hardwood stands of beech, birch, maple, oak, and hickory that have an open understory, and sometimes in stands of softwoods such as hemlock. It prefers acidic soils with a thick layer of dead leaves, often on slopes near small streams. The most recent survey of flora at CTARNG was in 2008, and this species was not recorded (Hastings 2008).

1.3.2 State-Listed Species

Comprehensive floral and faunal surveys were conducted in 2006 and 2007 (Hastings 2008; Gomez 2006), and surveys were also conducted in 1999 and 2000. Additional echolocation bat surveys were conducted in 2019 (CT DEEP 2019b). The results showed that there were no confirmed observations of federally listed species found in this survey, but Connecticut State listed species were found on both installations. Further studies are needed to determine the presence or absence of several bat species. Areas identified by the state as Natural Diversity Areas at these installations are presented on Figures F-3 and F-4 below.

Table F-3 State-Listed Species Observed at CTARNG Installations

Common Name	Scientific Name	Status	Installation found
Mammals			
Eastern small footed bat[(a)]	*Myotis leibii leibii*	E	SRMR, EHRR
Little brown bat	*Myosis lucifugus*	E	SRMR, EHRR
Northern long-eared bat[(b)]	*Myotis septentrionalis*	E	SRMR
Red bat	*Lasiurus borealis*	SC	SRMR, EHRR
Silver-haired bat	*Lasionycteris noctivagans*	SC	SRMR
Hoary bat	*Lasiurus cinereus*	SC	SRMR
Southern bog lemming	*Synaptomys cooperi*	SC	SRMR
Birds			

Table F-3 State-Listed Species Observed at CTARNG Installations

Common Name	Scientific Name	Status	Installation found
American Bittern	*Botaurus tentiginosus*	E	SRMR
Brown thrasher	*Toxostoma rufum*	SC	SRMR
Eastern meadowlark	*Sturnella magna*	T	SRMR, EHRR
Sharp-shinned hawk	*Accipiter striatus*	E	SRMR
Whip-poor-will	*Caprimulgus vociferus*	SC	SRMR
Reptiles and Amphibians			
Eastern box turtle	*Terrapene carolina carolina*	SC	EHRR
Eastern ribbon snake	*Thamnophis sauritus*	SC	SRMR
Jefferson salamander complex	*Ambystoma jeffersonianum*	SC	SRMR
Northern leopard frog	*Rana pipiens*	SC	EHRR
Spotted turtle	*Clemmys guttata*	SC	EHRR
Plants			
Sweet-scented Indian plantain	*Senecio suaveolens*	E	EHRR
Dioecious sedge	*Carex sterilis*	SC	SRMR
Field paspalum	*Paspalum laeve*	T	SRMR
Red pine[(c)]	*Pinus resinosa*	E	SRMR
Northern arrowhead	*Sagittaria cuneata*	E	SRMR
Georgia bulrush	*Scirpus georgianus*	SC	SRMR
Northern white cedar[(c)]	*Thuja occidentalis*	T	SRMR, EHRR

Sources: CT DEEP 2015, 2019b; Gomez 2006; Hastings 2008; University of Connecticut (UCONN) 1999; Native Plant Trust 2019
Note: SRMR= Stone's Ranch, EHRR= East Haven Rifle Range
(a) Needs further evaluation to determine if this is a valid identification.
(b) Species was noted at SRMR in 2006 faunal surveys (Gomez 2006). Northern long-eared bats have not been identified in surveys since 2006 (CT DEEP 2019b) and no hibernacula are known at CTARNG installations (CT DEEP 2016b).
(c) Only native populations are protected (i.e., landscape specimens are not protected).
T = State Threatened, E = State Endangered, SC = State Species of Special Concern

The following state listed species and Connecticut species of special concern have been observed at these two installations.

1.3.2.1 Stone's Ranch Military Reservation

During the 2006 fauna surveys and the 2006 and 2007 flora surveys, several state-listed species were observed at SRMR. These include the southern bog lemming (*Synaptomys cooperi*), a species of special concern that was only found in forest clearcut microhabitats (Gomez 2006). Several bat species that are state listed were noted in past surveys at SRMR, including the red bat (*Lasiurus borealis*), silver-haired bat (*Lasionycteris noctivagans*), and hoary bat (*Lasiurus cinereus*), which are species of special concern and small-footed bat (*Myotis leibii leibii*), and little brown bat (*Myosis lucifugus*), two state endangered species (CT DEEP 2019b). The little brown bat is currently undergoing a 12-month status review for listing under ESA (USFWS 2020d). The sharp-shinned hawk (*Accipiter striatus*), eastern meadowlark (*Sturnella magna*), brown thrasher (*Toxostoma rufum*), and eastern ribbon snake (*Thamnophis sauritus*) were noted in surveys in 1999 (UCONN 1999) but were not observed at the site during the 2006 surveys (Gomez 2006). The whip-poor-will, a state species of special concern, has also been observed at SRMR, as has the Jefferson salamander complex (*Ambystoma jeffersonianum*). Several listed plant species occur at SRMR, including the threatened field paspalum (*Paspalum laeve*) and northern white cedar (*Thuja*

occidentalis), and the endangered red pine (*Pinus resinosa*) and northern arrowhead (*Sagittaria cuneata*). Two species of special concern, dioecious sedge (*Carex sterilis*), and Georgia bulrush (*Scirpus georgianus*), have also been noted at the site (Hastings 2008).

1.3.2.2 East Haven Rifle Range

A population of sweet-scented Indian plantain (*Senecio suaveolens*) has been documented at EHRR and is the only known population in Connecticut. This species is found in moist woods and streambanks. The population at EHRR occurs along the Farm River in the floodplain along a sewer right-of-way for the Greater New Haven Water Pollution Control Authority. In 2007 CTARNG and CT DEEP entered into a Memorandum of Understanding for management of this species (CTARNG 2007). The northern white cedar also occurs at EHRR (CTARNG 2001). The eastern box turtle (*Terrapene carolina carolina*), a state species of special concern and the northern leopard frog have also been documented at EHRR (Gomez 2006). Eastern box turtles are known to nest at the site, and nest predation and human impacts to the populations are a concern. Other state listed species or state species of special concern noted at EHRR in past surveys include the red bat, eastern small-footed bat, and little brown bat (Gomez 2006), as well as the eastern meadowlark and spotted turtle (UCONN 1999).

1.3.3 At-Risk Species

The USFWS also considers at-risk species, or species that are proposed for listing as threatened or endangered under ESA, are candidate species for listing, or have been petitioned by a third party for listing. The little brown bat, has been identified at SRMR, and a spotted turtle was observed at EHRR in surveys in 1999. A list of at-risk species that have the potential to occur at CTARNG installations based on county species lists and habitat is provided on Table F-4.

Table F-4 At-Risk Species with the Potential to Occur on CTARNG Installations

Common Name	Scientific Name	At-Risk Status	Potential Location
Mammals			
Little brown bat	*Myosis lucifugus*	Discretionary Status Review/PLPCH	SRMR[(a)], EHRR
Tricolored bat	*Perimyotis subflavus*	12M/PLPCH	SRMR[(b)]
Birds			
Golden-winged warbler	*Vermivora chrysoptera*	12M/PLPCH	EHRR
Reptiles			
Spotted turtle	*Clemmys guttata*	12M/PLPCH	SRMR, EHRR[(a)]
Wood turtle	*Glyptemys insculpta*	12M/PLPCH	SRMR, EHRR
Invertebrates			
Monarch butterfly	*Danaus plexippus plexippus*	12M/PLPCH	SRMR, EHRR
Frosted elfin	*Callophrys irus*	Discretionary Status Review/PLPCH	SRMR

Sources: CT DEEP 2019b; Gomez 2006; UCONN 1999; USFWS 2020d
Note: SRMR= Stone's Ranch, EHRR= East Haven Rifle Range
12M/PLPCH - 12-month finding on a petition to list a species
Discretionary Status Review/PLPCH – Status review undertaken by discretion of the USFWS
PLPCH: Proposed listing determination for candidate species
(a) species known from past surveys
(b) species not found in past surveys of CTARNG installations

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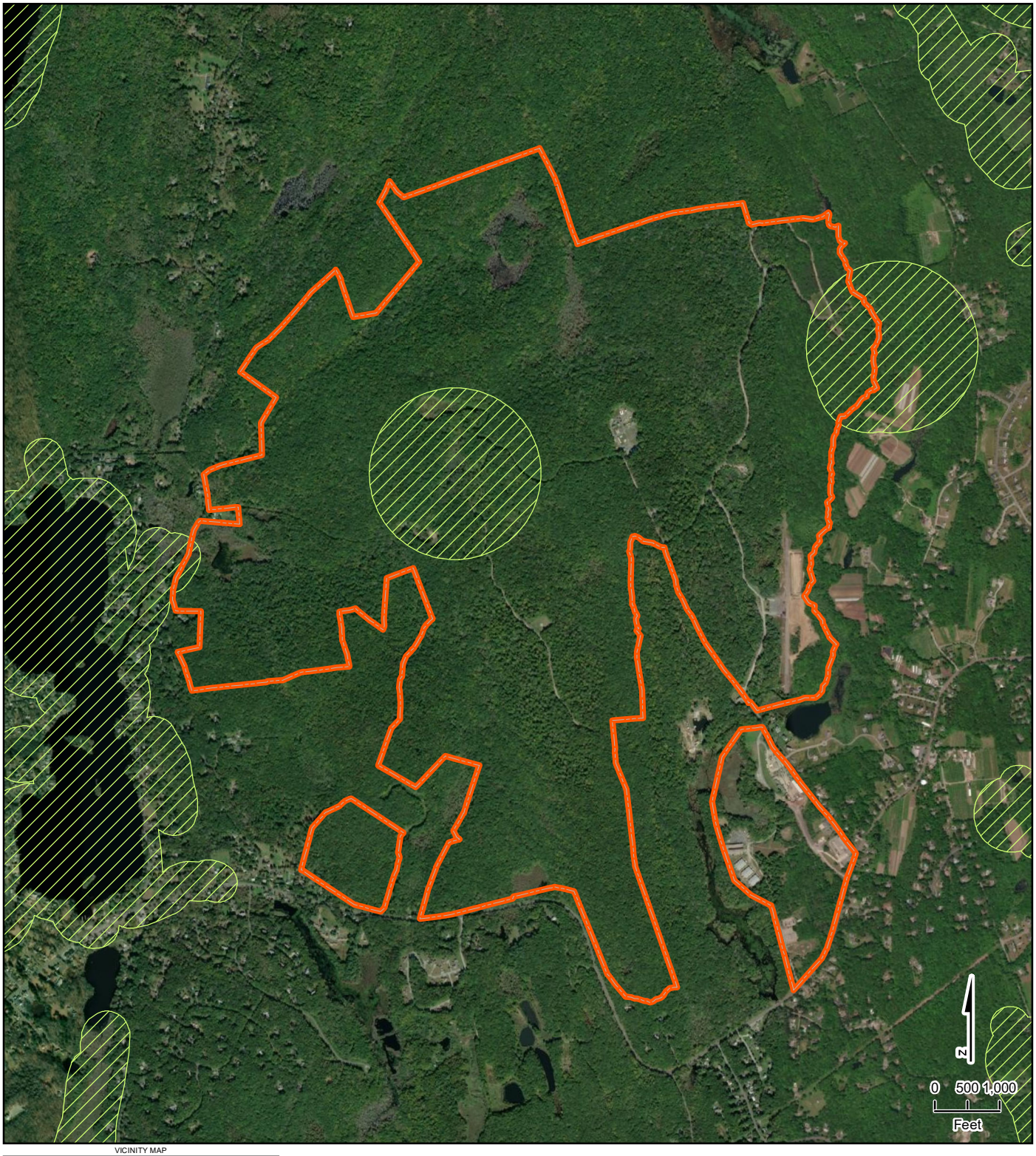

VICINITY MAP

Legend

- Installation Boundary
- Natural Diversity Area

Figure F-3
Natural Diversity Areas at SRMR
CTARNG INRMP
New London County, CT

Map Date: 8/11/2020
Source: Esri, DeLorme, HERE, USGS, et.al 2020
Projection: WGS 1984 UTM Zone 18N

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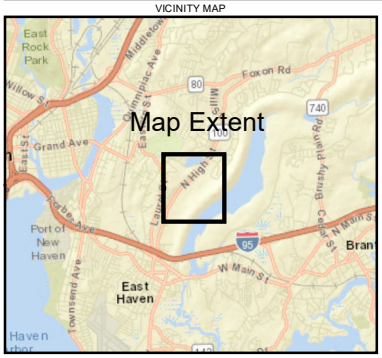
VICINITY MAP



Legend

- Installation Boundary
- Natural Diversity Area

Figure F-4
Natural Diversity Areas at EHRR
CTARNG INRMP
New Haven County, CT

Map Date: 8/11/2020
Source: Esri, DeLorme, HERE, USGS, et.al 2020
Projection: WGS 1984 UTM Zone 18N

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1.4 MIGRATORY BIRDS OF CONCERN

Migratory birds are protected under the Migratory Bird Protection Act (16 USC §§ 703-711), a law making unlawful the kill, capture, buy, sell, import, or export of migratory birds, eggs, feathers, or other parts. The USFWS implements the provisions of the Migratory Bird Protection Act through regulations in parts 10, 13, 20, 21, and 22 of title 50 of the Code of Federal Regulations. The DoD developed a Memorandum of Understanding to address Executive Order 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds* "to promote the conservation of migratory bird populations while sustaining the use of military managed lands and airspace for testing, training, and operations."

The USFWS is required under the Fish and Wildlife Conservation Act to identify nongame migratory birds that would likely become candidates for listing under the Endangered Species Act without additional conservation measures. These birds are considered Birds of Conservation Concern. Table F-9 in Attachment F-1 at the end of this appendix presents a list of migratory birds of concern that could be present at CTARNG installations, as identified by the USFWS. Of these 29 species, three species are known to occur at CTARNG installations. These species are shown in Table F-4.

Table F-5 Migratory Bird Species with Known to Occur at CTARNG Installations

Common Name	Scientific Name	Priority	Location
Eastern Whip-poor-will	*Antrostomus vociferus*	High	SRMR
Prairie Warbler	*Setophaga discolor*	Highest	SRMR
Wood Thrush	*Hylocichla mustelina*	Highest	SRMR, EHRR

Sources: USFWS 2020a, b; Gomez 2006; Bird Studies Canada and NABCI 2014
Note: SRMR= Stone's Ranch, EHRR= East Haven Rifle Range

1.5 WETLANDS

Executive Order 11990, *Protection of Wetlands,* directs all federal agencies to avoid to the maximum extent possible, the long- and short-term adverse impacts associated with the occupancy, destruction, or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative. Wetlands are defined as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal conditions do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (USACE 1987). Wetland areas are identified based on the presence of hydrophytic vegetation, hydric soils, and hydrology. Wetland functions include groundwater recharge/discharge, flood/flow alteration, sediment stabilization, sediment and toxicant retention, nutrient removal and transformation, aquatic and terrestrial diversity and abundance, and uniqueness. Wetlands are protected as a subset of the "waters of the United States" under Section 404 of the Clean Water Act (CWA). The term "waters of the United States" has broad meaning under the CWA and incorporates deep water aquatic habitats and special aquatic habitats (including wetlands). Jurisdictional waters of the United States are areas regulated under the CWA and also include coastal and inland waters, lakes, rivers, ponds, streams, intermittent streams, and "other" waters that if degraded or destroyed could affect interstate commerce. The state of Connecticut also regulates activities affecting inland wetlands and watercourses under the Inland Wetlands and Watercourses Act, which includes rivers, streams, brooks, waterways, lakes, ponds,

marshes, swamps, bogs and all other bodies of water (natural or artificial, vernal or intermittent, public or private) that are contained within, flow through, or border upon the state.

1.5.1 Stone's Ranch Military Reservation

Wetlands were delineated at SRMR in 2000, and approximately 93 acres of palustrine wetlands and 8 miles of riverine waters was surveyed (CTARNG 2006). Wetlands at SRMR are presented on Figure F-5. A large area of wetlands is on the northwest portion of the SRMR cantonment area. A small area of wetlands is along the southeastern edge of the cantonment area. Numerous areas of wetlands are scattered throughout the training area. These generally occur along water courses and in depressions between hilly areas (CTARNG 2019).

1.5.2 East Haven Rifle Range

EHRR is near but separated from Lake Saltonstall by the Saltonstall Ridge and has approximately 9.87 acres of wetlands and 0.91 acre of riverine systems (Figure F-6) (CTARNG 2006). The Farm River flows southward through the installation from its northern boundary to its southern boundary and out to Long Island Sound. Wetlands on the EHRR occur within the 100-year floodplain of the Farm River (CTARNG 2019).

1.6 FLOODPLAINS

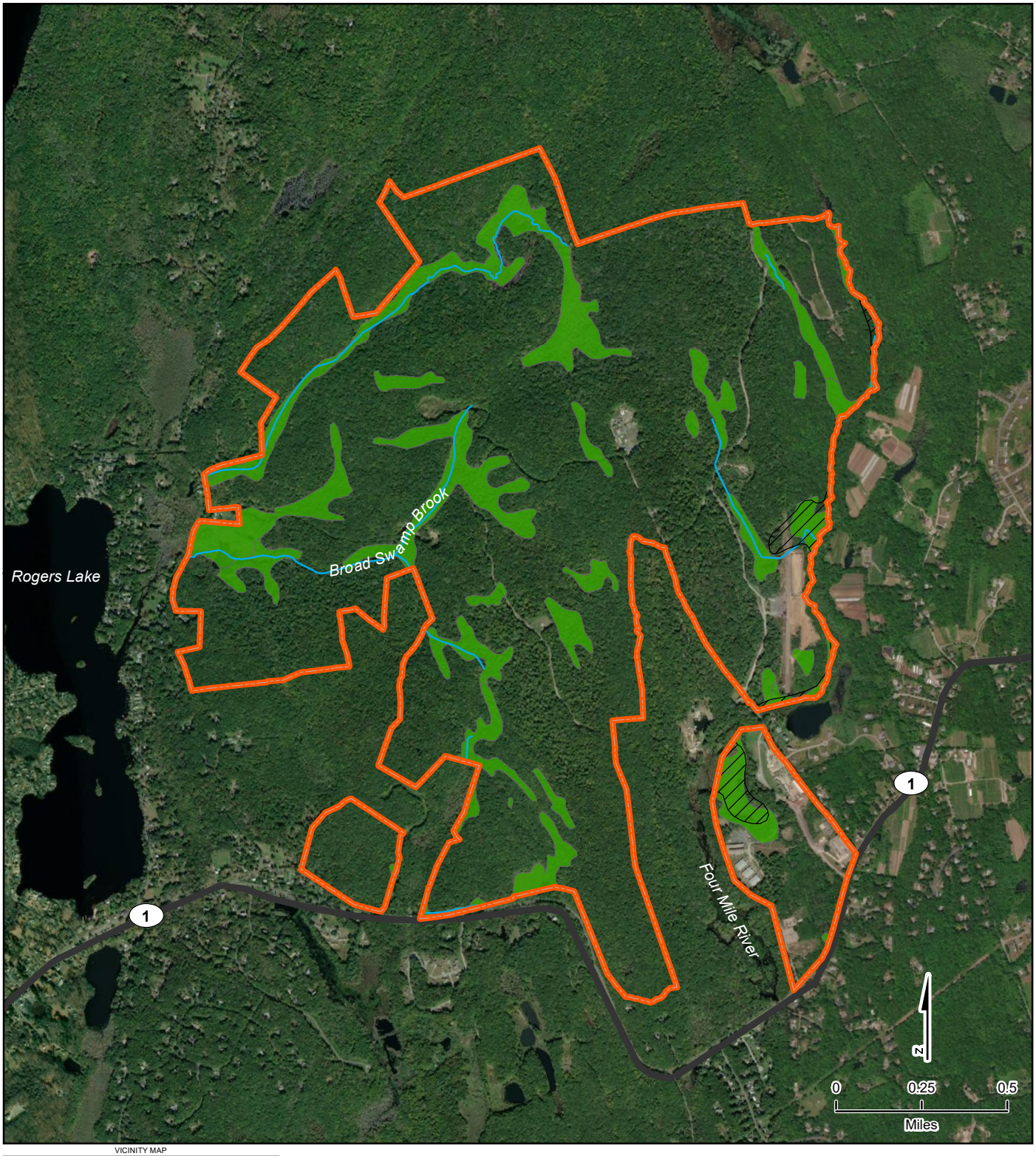
EO 11988, *Floodplain Management,* issued 24 May 1977, requires all federal agencies to provide leadership and take action to reduce the risk of flood loss; minimize the impacts of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values of floodplains when acquiring, managing, or disposing of federal lands. EO 11988 is implemented through the CWA and 44 Code of Federal Regulations Part 9, *Floodplain Management and Protection of Wetlands*. Floodplains are defined in this EO as "the lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands including, at a minimum, that area subject to a 1 percent or greater chance of flooding in any given year." Flooding in the 100-year floodplain is expected to occur from a flood that has a 1 percent probability of occurring in any given year; therefore, the 100-year floodplain has an annual probability of exceedance of 1 percent.

1.6.1 Stone's Ranch Military Reservation

At SRMR, the 1 percent annual chance floodplain (100-year floodplain) of Fourmile River is partially within the installation boundaries along the eastern edge of the training area and the northwest portion of the cantonment area (Figure F-5). (Federal Emergency Management Agency [FEMA] 2011a,b). No areas of 500-year floodplain are on SRMR.

1.6.2 East Haven Rifle Range

At EHRR, the 1 percent annual chance floodplain (100-year floodplain) of the Farm River occupies much of the western half of the installation (Figure F-6). A portion of the floodplain around Farm River is also considered a regulatory floodway. Minor areas of 0.2 percent annual chance floodplain (500-year floodplain) are also present on EHRR (FEMA 2017).



VICINITY MAP

Legend

- Installation Boundary
- Wetlands
- 100 Year Flood Zone
- Streams
- Highway

Figure F-5
Water Resources Map, SRMR
CTARNG INRMP
New London County, CT

Map Date: 8/10/2020
Source: Esri, DeLorme, HERE, USGS, et.al 2020
Projection: WGS 1984 UTM Zone 18N

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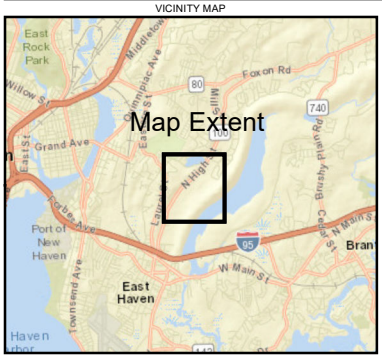
VICINITY MAP



Legend

- Installation Boundary
- Wetlands
- 100 Year Flood Zone
- 500 Year Flood Zone
- Streams

Figure F-6
Water Resources Map, EHRR
CTARNG INRMP
New Haven County, CT

Map Date: 8/3/2020
Source: Esri, DeLorme, HERE, USGS, et.al 2020
Projection: WGS 1984 UTM Zone 18N

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Attachment F-1 Flora and Fauna Known to Occur at CTARNG Installations during Past Surveys

Table F-6 List of Plant Species Identified at CTARNG Installations during Past Surveys

Family	Scientific Name	EHRR	SRMR
Aceraceae (Maple Family)			
	Acer negundo	X	
	Acer platanoides	X	X
	Acer rubrum var. *rubrum*		X
	Acer saccharinum	X	
	Acer saccharum	X	X
Alismataceae (Water-plantain Family)			
	Alisma subcordatum	X	
	Sagittaria cuneata[3]		X
	Sagittaria latifolia	X	X
Amaranthaceae (Amaranth Family)			
	Amaranthus hybridus	X	
	Froelichia gracilis	X	
Anacardiaceae (Cashew Family)			
	Rhus copallinum	X	X
	Rhus glabra	X	X
	Rhus hirta	X	
	Toxicodendron radicans ssp. *radicans*	X	
	Toxicodendron vernix		X
Apiaceae (Carrot Family)			
	Cicuta maculata	X	X
	Daucus carota	X	X
	Heracleum maximum	X	
	Hydrocotyle americana		X
	Hydrocotyle umbellata[3]		X
	Sium suave		X
Apocynaceae (Dogbane Family)			
	Apocynum cannabinum	X	X
	Vinca minor	X	X
Aquifoliaceae (Holly Family)			
	Ilex laevigata	X	X
	Ilex verticillata		X
Araceae (Arum Family)			
	Arisaema dracontium	X	
	Arisaema triphyllum	X	X
	Symplocarpus foetidus		X

Table F-6 List of Plant Species Identified at CTARNG Installations during Past Surveys

Family	Scientific Name	EHRR	SRMR
Araliaceae (Ginseng Family)			
	Aralia nudicaulis	X	X
	Panax trifolius	X	X
Aristolochiaceae (Birthwort Family)			
	Asarum canadense	X	
Asclepiadaceae (Milkweed Family)			
	Asclepias exaltata	X	
	Asclepias incarnata		X
	Asclepias syriaca	X	
	Asclepias tuberosa		X
Asteraceae (Aster Family)			
	Achillea millefolium		X
	Ambrosia artemisiifolia	X	X
	Ambrosia psilostachya	X	
	Ambrosia trifida	X	
	Antennaria parlinii ssp. *fallax*	X	
	Antennaria parlinii ssp. *parlinii*		X
	Anthemis arvensis	X	
	Arctium minus		X
	Artemisia campestris ssp. *caudata*	X	
	Artemisia vulgaris	X	X
	Bidens cernua	X	
	Bidens discoidea		X
	Bidens tripartita	X	X
	Centaurea biebersteinii	X	X
	Cichorium intybus	X	X
	Cirsium arvense	X	X
	Cirsium discolor	X	
	Cirsium muticum		X
	Cirsium vulgare		X
	Conyza canadensis var. *canadensis*	X	X
	Doellingeria umbellata var. *umbellata*		X
	Erechtites hieraciifolia var. *hieraciifolia*	X	X
	Erigeron annuus	X	
	Erigeron strigosus var. *septentrionalis*	X	X
	Eupatorium dubium		X
	Eupatorium hyssopifolium var. *hyssopifolium*		X
	Eupatorium perfoliatum	X	X

Table F-6 List of Plant Species Identified at CTARNG Installations during Past Surveys

Family	Scientific Name	EHRR	SRMR
	Eurybia divaricata	X	X
	Eurybia schreberi		X
	Euthamia graminifolia	X	X
	Euthamia tenuifolia var. *pycnocephala*		X
	Hasteola suaveolens	X	
	Helenium flexuosum	X	X
	Hieracium caespitosum	X	X
	Hieracium pilosella		X
	Hieracium piloselloides		X
	Hieracium scabrum		X
	Hieracium x *floribundum*	X	X
	Hypochaeris radicata	X	X
	Krigia virginica	X	X
	Leucanthemum vulgare	X	X
	Mikania scandens		X
	Prenanthes alba		X
	Prenanthes altissima	X	
	Pseudognaphalium obtusifolium ssp. *obtusifolium*	X	X
	Rudbeckia hirta var. *pulcherrima*		X
	Senecio vulgaris	X	
	Sericocarpus asteroides		X
	Solidago bicolor		X
	Solidago caesia		X
	Solidago canadensis var. *hargeri*	X	
	Solidago rugosa ssp. *aspera*		X
	Solidago rugosa ssp. *rugosa* var. *rugosa*	X	
	Symphyotrichum lateriflorum var. *angustifolium*		X
	Symphyotrichum patens var. *patens*		X
	Symphyotrichum pilosum var. *pringlei*	X	
	Symphyotrichum undulatum		X
	Taraxacum officinale ssp. *officinale*	X	X
	Tussilago farfara	X	
Balsaminaceae (Balsam Family)			
	Impatiens capensis	X	X
Berberidaceae (Barberry Family)			
	Berberis thunbergii	X	X
	Caulophyllum thalictroides	X	

Table F-6 List of Plant Species Identified at CTARNG Installations during Past Surveys

Family	Scientific Name	EHRR	SRMR
	Podophyllum peltatum		X
Betulaceae (Birch Family)			
	Alnus glutinosa		X
	Alnus incana ssp. *rugosa*	X	
	Alnus serrulata	X	X
	Betula alleghaniensis		X
	Betula lenta	X	X
	Betula populifolia	X	X
Bignoniaceae (Bignonia Family)			
	Catalpa bignonioides	X	X
Boraginaceae (Forget-Me-Not Family)			
	Myosotis stricta	X	
	Myosotis verna	X	
Brassicaceae (Mustard Family)			
	Alliaria petiolata	X	
	Arabidopsis thaliana	X	X
	Barbarea vulgaris	X	X
	Berteroa incana	X	
	Capsella bursa-pastoris	X	X
	Cardamine bulbosa		X
	Draba verna	X	
	Lepidium campestre	X	X
	Lepidium densiflorum var. *densiflorum*	X	X
	Rorippa microphylla		X
	Rorippa palustris ssp. *palustris*	X	
	Teesdalia nudicaulis	X	
Buddlejaceae (Butterfly-bush Family)			
	Buddleja davidii		X
Buxaceae (Boxwood Family)			
	Pachysandra terminalis		X
Campanulaceae (Bellflower Family)			
	Campanula aparinoides		X
	Campanulastrum americanum		X
	Lobelia cardinalis		X
	Lobelia inflata	X	X
	Triodanis perfoliata		X

Table F-6 List of Plant Species Identified at CTARNG Installations during Past Surveys

Family	Scientific Name	EHRR	SRMR
Caprifoliaceae (Honeysuckle Family)			
	Lonicera japonica	X	X
	Sambucus nigra ssp. *canadensis*	X	X
	Viburnum acerifolium	X	X
	Viburnum dentatum var. *lucidum*	X	X
	Viburnum lentago	X	
Caryophyllaceae (Carnation Family)			
	Arenaria serpyllifolia	X	X
	Cerastium fontanum ssp. *vulgare*		X
	Cerastium glomeratum		X
	Cerastium semidecandrum	X	
	Dianthus armeria	X	X
	Saponaria officinalis	X	
	Scleranthus annuus	X	X
	Silene latifolia ssp. *alba*	X	
	Silene vulgaris		X
	Stellaria media		X
Celastraceae (Bittersweet Family)			
	Celastrus orbiculatus	X	X
	Euonymus alata	X	X
Chenopodiaceae (Goosefoot Family)			
	Chenopodium ambrosioides	X	
Cistaceae (Rock-rose Family)			
	Helianthemum bicknellii		X
	Lechea tenuifolia		X
Clethraceae (White Alder Family)			
	Clethra alnifolia	X	X
Clusiaceae (Mangosteen Family)			
	Hypericum gentianoides		X
	Hypericum perforatum	X	X
	Hypericum punctatum	X	
	Triadenum virginicum		X
Commelinaceae (Spiderwort Family)			
	Commelina communis	X	
	Tradescantia virginiana	X	
Convolvulaceae (Bindweed Family)			
	Calystegia sepium ssp. *sepium*	X	X

Table F-6 List of Plant Species Identified at CTARNG Installations during Past Surveys

Family	Scientific Name	EHRR	SRMR
Cornaceae (Dogwood Family)			
	Cornus amomum	X	X
	Cornus florida	X	X
Corylaceae (Hazel Family)			
	Carpinus caroliniana ssp. *virginiana*	X	X
	Corylus americana	X	X
	Ostrya virginiana		X
Cucurbitaceae (Gourd Family)			
	Sicyos angulatus	X	
Cupressaceae (Cypress Family)			
	Juniperus virginiana var. *virginiana*	X	X
Cuscutaceae (Dodder Family)			
	Cuscuta gronovii	X	X
Cyperaceae (Sedge Family)			
	Bulbostylis capillaris ssp. *capillaris*		X
	Carex albicans var. *albicans*		X
	Carex annectens	X	X
	Carex atlantica ssp. *capillacea*		X
	Carex communis		X
	Carex crinita	X	
	Carex digitalis	X	X
	Carex festucacea	X	
	Carex folliculata	X	X
	Carex laxiculmis var. *laxiculmis*		X
	Carex laxiflora var. *laxiflora*	X	X
	Carex laxiflora var. *serrulata*	X	X
	Carex lupulina	X	X
	Carex pensylvanica		X
	Carex prasina	X	
	Carex rosea	X	X
	Carex scoparia var. *scoparia*	X	X
	Carex squarrosa	X	
	Carex sterilis[1]		X
	Carex swanii		X
	Carex torta		X
	Carex virescens		X
	Carex vulpinoidea var. *vulpinoidea*	X	X
	Cyperus amuricus	X	

Table F-6 List of Plant Species Identified at CTARNG Installations during Past Surveys

Family	Scientific Name	EHRR	SRMR
	Cyperus esculentus	X	
	Dulichium arundinaceum		X
	Eleocharis obtusa	X	X
	Scirpus georgianus[1]		X
	Scirpus hattorianus		X
	Scirpus microcarpus		X
Dennstaedtiaceae (Bracken Family)			
	Dennstaedtia punctilobula		X
	Pteridium aquilinum var. *latiusculum*		X
Dioscoreaceae (Yam Family)			
	Dioscorea villosa	X	X
Dryopteridaceae (Shield Fern Family)			
	Athyrium filix-femina		X
	Cystopteris fragilis		X
	Onoclea sensibilis		X
	Polystichum acrostichoides	X	X
Elaeagnaceae (Oleaster Family)			
	Elaeagnus umbellata	X	X
Equisetaceae (Horsetail Family)			
	Equisetum arvense	X	X
	Equisetum fluviatile	X	
Ericaceae (Heath Family)			
	Gaylussacia baccata		X
	Kalmia latifolia	X	X
	Lyonia ligustrina		X
	Rhododendron maximum		X
	Rhododendron periclymenoides	X	X
	Rhododendron viscosum		X
	Vaccinium corymbosum		X
	Vaccinium pallidum	X	X
Euphorbiaceae (Spurge Family)			
	Chamaesyce nutans		X
Fabaceae (Legume Family)			
	Baptisia tinctoria	X	X
	Chamaecrista nictitans ssp. *nictitans*	X	X
	Coronilla varia		X
	Desmodium marilandicum		X
	Desmodium paniculatum		X

Table F-6 List of Plant Species Identified at CTARNG Installations during Past Surveys

Family	Scientific Name	EHRR	SRMR
	Kummerowia stipulacea		X
	Lathyrus latifolius		X
	Lespedeza capitata	X	X
	Lespedeza cuneata		X
	Lotus corniculatus	X	X
	Medicago sativa ssp. *sativa*	X	
	Melilotus officinalis		X
	Robinia pseudoacacia	X	
	Strophostyles helvula	X	X
	Trifolium arvense	X	X
	Trifolium aureum		X
	Trifolium campestre	X	
	Trifolium dubium	X	X
	Trifolium pratense	X	X
	Trifolium repens	X	X
	Vicia villosa ssp. *varia*		X
Fagaceae (Beech Family)			
	Castanea dentata		X
	Fagus grandifolia	X	X
	Quercus alba	X	X
	Quercus coccinea		X
	Quercus palustris	X	X
	Quercus prinus	X	X
	Quercus rubra	X	
	Quercus velutina	X	X
Geraniaceae (Geranium Family)			
	Geranium maculatum	X	X
	Geranium pratense		X
Haloragaceae (Watermilfoil Family)			
	Proserpinaca palustris var. *palustris*		X
Hamamelidaceae (Witch-hazel Family)			
	Hamamelis virginiana	X	X
Iridaceae (Iris Family)			
	Iris versicolor	X	X
	Sisyrinchium atlanticum		X
	Sisyrinchium mucronatum	X	

Table F-6 List of Plant Species Identified at CTARNG Installations during Past Surveys

Family	Scientific Name	EHRR	SRMR
Juglandaceae (Walnut Family)			
	Carya glabra	X	X
	Carya ovata	X	X
	Juglans nigra	X	X
Juncaceae (Rush Family)			
	Juncus acuminatus	X	X
	Juncus dichotomus	X	X
	Juncus effusus	X	X
	Juncus tenuis		X
	Luzula multiflora ssp. *multiflora*	X	X
Lamiaceae (Mint Family)			
	Glechoma hederacea		X
	Lycopus americanus	X	
	Lycopus virginicus		X
	Prunella vulgaris ssp. *lanceolata*	X	X
	Pycnanthemum tenuifolium		X
	Pycnanthemum virginianum		X
	Stachys palustris		X
	Trichostema dichotomum	X	
Lauraceae (Laurel Family)			
	Lindera benzoin var. *benzoin*	X	X
	Sassafras albidum	X	X
Lemnaceae (Duckweed Family)			
	Lemna minor	X	
Liliaceae (Lily Family)			
	Allium canadense	X	
	Allium tricoccum	X	
	Allium vineale	X	
	Erythronium americanum	X	
	Hemerocallis cf fulva	X	
	Hypoxis hirsuta		X
	Maianthemum canadense	X	X
	Maianthemum racemosum ssp. *racemosum*	X	X
	Medeola virginiana	X	X
	Ornithogalum umbellatum		X
	Polygonatum pubescens	X	X
	Trillium cernuum	X	
	Veratrum viride		X

Table F-6 List of Plant Species Identified at CTARNG Installations during Past Surveys

Family	Scientific Name	EHRR	SRMR
Lycopodiaceae (Club-moss Family)			
	Lycopodiella inundata		X
	Lycopodium clavatum		X
	Lycopodium complanatum		X
	Lycopodium digitatum		X
	Lycopodium hickeyi		X
	Lycopodium obscurum		X
Lythraceae (Loosestrife Family)			
	Lythrum salicaria	X	
Magnoliaceae (Magnolia Family)			
	Liriodendron tulipifera		X
Molluginaceae (Carpet-weed Family)			
	Mollugo verticillata	X	
Monotropaceae (Indian Pipe Family)			
	Monotropa uniflora	X	X
Moraceae (Mulberry Family)			
	Morus alba		X
	Morus rubra	X	
Myricaceae (Wax Myrtle Family)			
	Comptonia peregrina		X
	Morella pensylvanica	X	X
Nymphaeaceae (Water Lily Family)			
	Nuphar lutea ssp. *variegata*	X	X
	Nymphaea odorata		X
Nyssaceae (Dogwood Family)			
	Nyssa sylvatica		X
Oleaceae (Olive Family)			
	Fraxinus americana	X	X
	Fraxinus pennsylvanica var. *pennsylvanica*	X	X
	Fraxinus pennsylvanica var. *subintegerrima*	X	X
	Ligustrum obtusifolium	X	
Onagraceae (Evening Primrose Family)			
	Circaea lutetiana ssp. *canadensis*	X	X
	Epilobium ciliatum ssp. *ciliatum*		X
	Ludwigia alternifolia		X
	Ludwigia palustris		X
	Oenothera parviflora	X	X

Table F-6 List of Plant Species Identified at CTARNG Installations during Past Surveys

Family	Scientific Name	EHRR	SRMR
Ophioglossaceae (Adder's-tongue Family)			
	Botrychium dissectum		X
Orchidaceae (Orchid Family)			
	Cypripedium acaule		X
	Epipactis helleborine		X
	Goodyera pubescens	X	X
	Spiranthes cernua		X
Orobanchaceae (Broom-rape Family)			
	Conopholis americana	X	
	Epifagus virginiana	X	X
Osmundaceae (Royal Fern Family)			
	Osmunda cinnamomea var. *cinnamomea*		X
	Osmunda claytoniana	X	X
	Osmunda regalis var. *spectabilis*		X
Oxalidaceae (Wood Sorrel Family)			
	Oxalis corniculata	X	
	Oxalis stricta	X	X
Papaveraceae (Poppy Family)			
	Sanguinaria canadensis	X	X
Phytolaccaceae (Pokeweed Family)			
	Phytolacca americana	X	X
Pinaceae (Pine Family)			
	Picea abies	X	X
	Pinus resinosa[3]		X
	Pinus strobus	X	X
	Pinus sylvestris	X	X
	Tsuga canadensis		X
Plantaginaceae (Plantain Family)			
	Plantago aristata		X
	Plantago lanceolata	X	X
	Plantago major		X
	Plantago rugelii	X	
Platanaceae (Plane-tree Family)			
	Platanus occidentalis	X	
Poaceae (Grass Family)			
	Agrostis capillaris		X
	Agrostis hyemalis	X	
	Agrostis perennans		X

Table F-6 List of Plant Species Identified at CTARNG Installations during Past Surveys

Family	Scientific Name	EHRR	SRMR
	Agrostis scabra	X	X
	Agrostis stolonifera		X
	Alopecurus pratensis	X	
	Anthoxanthum odoratum	X	X
	Aristida dichotoma var. *dichotoma*		X
	Arrhenatherum elatius var. *elatius*		X
	Brachyelytrum aristosum		X
	Bromus hordeaceus		X
	Bromus inermis ssp. *inermis*		X
	Bromus tectorum	X	X
	Calamagrostis canadensis		X
	Cinna arundinacea	X	X
	Dactylis glomerata ssp. *glomerata*	X	X
	Danthonia compressa		X
	Danthonia spicata	X	X
	Deschampsia flexuosa var. *flexuosa*		X
	Dichanthelium acuminatum var. *fasciculatum*	X	X
	Dichanthelium boreale		X
	Dichanthelium boscii	X	X
	Dichanthelium clandestinum	X	X
	Dichanthelium dichotomum		X
	Dichanthelium linearifolium		X
	Dichanthelium oligosanthes var. *scribnerianum*		X
	Digitaria ciliaris		X
	Digitaria filiformis	X	
	Digitaria ischaemum	X	X
	Digitaria sanguinalis		X
	Echinochloa muricata var. *muricata*	X	
	Elymus hystrix var. *hystrix*		X
	Elymus repens	X	X
	Eragrostis pectinacea var. *pectinacea*	X	
	Eragrostis pilosa		X
	Eragrostis spectabilis	X	X
	Festuca rubra ssp. *rubra*		X
	Festuca trachyphylla		X
	Glyceria canadensis		X
	Glyceria striata	X	X
	Holcus lanatus		X

Table F-6 List of Plant Species Identified at CTARNG Installations during Past Surveys

Family	Scientific Name	EHRR	SRMR
	Lolium perenne	X	X
	Panicum capillare	X	
	Panicum dichotomiflorum var. *dichotomiflorum*	X	
	Panicum rigidulum var. *rigidulum*	X	
	Paspalum laeve[2]		X
	Phalaris arundinacea	X	
	Phleum pratense		X
	Phragmites australis	X	
	Piptochaetium avenaceum		X
	Poa annua		X
	Poa compressa	X	X
	Poa pratensis ssp. *pratensis*		X
	Poa trivialis	X	
	Schedonorus phoenix		X
	Schizachyrium scoparium var. *scoparium*	X	X
	Setaria faberi		X
	Setaria pumila		X
	Sorghastrum nutans		X
	Sphenopholis intermedia	X	
	Tridens flavus var. *flavus*	X	
	Vulpia octoflora var. *octoflora*		X
Polygalaceae (Milkwort Family)			
	Polygala polygama		X
	Polygala sanguinea		X
Polygonaceae (Knotweed Family)			
	Polygonella articulata	X	
	Polygonum amphibium var. *emersum*		X
	Polygonum arifolium	X	X
	Polygonum aviculare		X
	Polygonum caespitosum var. *longisetum*	X	X
	Polygonum cuspidatum	X	X
	Polygonum hydropiperoides		X
	Polygonum pensylvanicum	X	X
	Polygonum punctatum var. *punctatum*	X	X
	Polygonum sagittatum		X
	Polygonum tenue		X
	Rumex acetosella	X	X
	Rumex crispus		X

Table F-6 List of Plant Species Identified at CTARNG Installations during Past Surveys

Family	Scientific Name	EHRR	SRMR
	Rumex obtusifolius	X	
	Rumex salicifolius var. *mexicanus*	X	X
Polypodiaceae (Polypody Family)			
	Polypodium virginianum		X
Portulaceae (Purslane Family)			
	Claytonia virginica	X	
Potamogetonaceae (Pondweed Family)			
	Potamogeton epihydrus		X
Primulaceae (Primrose Family)			
	Lysimachia ciliata	X	
	Lysimachia nummularia	X	
	Lysimachia quadrifolia	X	X
	Lysimachia terrestris		X
	Trientalis borealis		X
Pteridaceae (Maidenhair Fern Family)			
	Adiantum pedatum		X
Pyrolaceae (Shinleaf Family)			
	Chimaphila maculata	X	X
	Orthilia secunda[1]		X
	Pyrola americana	X	X
Ranunculaceae (Buttercup Family)			
	Actaea pachypoda		X
	Anemone quinquefolia var. *quinquefolia*	X	X
	Aquilegia canadensis		X
	Caltha palustris var. *palustris*		X
	Clematis virginiana	X	
	Hepatica nobilis var. *obtusa*	X	
	Ranunculus abortivus	X	
	Ranunculus bulbosus	X	X
	Ranunculus hispidus var. *hispidus*	X	
	Thalictrum dasycarpum		X
	Thalictrum pubescens		X
	Thalictrum thalictroides	X	
Rosaceae (Rose Family)			
	Amelanchier arborea		X
	Crataegus crus-galli	X	
	Fragaria virginiana	X	X
	Geum canadense	X	X

Table F-6 List of Plant Species Identified at CTARNG Installations during Past Surveys

Family	Scientific Name	EHRR	SRMR
	Malus baccata	X	
	Malus cf prunifolia		X
	Malus pumila	X	X
	Photinia melanocarpa		X
	Potentilla argentea var. *argentea*	X	X
	Potentilla canadensis	X	X
	Potentilla reptans	X	
	Potentilla simplex	X	X
	Prunus avium		X
	Prunus serotina		X
	Rosa blanda var. *blanda*	X	
	Rosa multiflora	X	X
	Rosa palustris		X
	Rubus pensilvanicus	X	
	Rubus phoenicolasius	X	X
	Rubus pubescens		X
	Spiraea alba var. *alba*		X
	Spiraea tomentosa		X
Rubiaceae (Bedstraw Family)			
	Diodia teres var. *teres*	X	X
	Galium aparine	X	
	Galium asprellum		X
	Galium circaezans var. *circaezans*	X	X
	Galium mollugo		X
	Galium obtusum ssp. *obtusum*		X
	Galium pilosum var. *pilosum*	X	X
	Galium triflorum	X	X
	Mitchella repens	X	X
Salicaceae (Willow Family)			
	Populus alba	X	
	Populus deltoides ssp. *deltoides*	X	X
	Populus tremuloides		X
	Salix alba	X	X
	Salix discolor	X	X
	Salix lucida	X	
Saxifragaceae (Saxifrage Family)			
	Chrysosplenium americanum		X

Table F-6 List of Plant Species Identified at CTARNG Installations during Past Surveys

Family	Scientific Name	EHRR	SRMR
Scrophulariaceae (Figwort Family)			
	Agalinis tenuifolia	X	X
	Chelone glabra		X
	Gratiola neglecta		X
	Linaria vulgaris	X	X
	Melampyrum lineare		X
	Mimulus ringens		X
	Nuttallanthus canadensis	X	X
	Verbascum blattaria	X	
	Verbascum thapsus		X
	Veronica arvensis	X	X
	Veronica officinalis		X
	Veronica peregrina	X	X
	Veronica serpyllifolia ssp. *serpyllifolia*		X
Simaroubaceae (Quassia Family)			
	Ailanthus altissima	X	X
Smilacaceae (Greenbrier Family)			
	Smilax herbacea	X	
	Smilax rotundifolia	X	X
Solanaceae (Potato Family)			
	Solanum dulcamara	X	
Sparganiaceae (Bur-reed Family)			
	Sparganium americanum		X
Thelypteridaceae (Marsh Fern Family)			
	Phegopteris hexagonoptera	X	X
	Thelypteris noveboracensis		X
	Thelypteris palustris var. *pubescens*		X
Tiliaceae (Linden Family)			
	Tilia americana var. americana	X	
Typhaceae (Cat-tail Family)			
	Typha angustifolia	X	X
	Typha latifolia		X
Ulmaceae (Elm Family)			
	Celtis occidentalis	X	
	Ulmus rubra	X	

Table F-6 List of Plant Species Identified at CTARNG Installations during Past Surveys

Family	Scientific Name	EHRR	SRMR
Urticaceae (Nettle Family)			
	Boehmeria cylindrica	X	X
	Laportea canadensis	X	
	Parietaria pensylvanica		X
Verbenaceae (Verbena Family)			
	Verbena hastata	X	
Violaceae (Violet Family)			
	Viola conspersa	X	X
	Viola cucullata	X	X
	Viola lanceolata		X
	Viola macloskeyi		X
	Viola palmata		X
	Viola pedata		X
	Viola pubescens	X	
	Viola sagittata var. *ovata*	X	X
	Viola sororia	X	
	Viola X *primulifolia*		X
Vitaceae (Grape Family)			
	Parthenocissus quinquefolia	X	X
	Vitis aestivalis	X	
	Vitis labrusca	X	X

Source: Hastings 2008
Note: SRMR= Stone's Ranch, EHRR= East Haven Rifle Range
1 – Connecticut Species of Concern
2 – Federally Threatened Species
3 – Federally Endangered Species

Table F-7 List of Bird Species Identified at CTARNG Installations during Past Surveys

Common Name	Scientific Name	EHRR	SRMR
Year-long Residents			
American Crow	*Corvus brachyrhynchos*	X	X
American Goldfinch	*Spinus tristis*	X	X
American Robin	*Turdus migratorius*	X	X
Belted Kingfisher	*Megaceryle alcyon*		X
Black-Capped Chickadee	*Poecile atricapillus*	X	X
Blue Jay	*Cyanocitta cristata*	X	X
Brown-headed Cowbird	*Molothrus ater*	X	X
Canada Goose	*Branta canadensis*		X
Carolina Wren	*Thryothorus ludovicianus*	X	X
Cedar Waxwing	*Bombycilla cedrorum*		X
Common Grackle	*Quiscalus quiscula*	X	X
Downy Woodpecker	*Dryobates pubescens*	X	X
Eastern Bluebird	*Sialia sialis*		X
Eastern Screech-owl	*Megascops asio*	X	
Eastern Tufted Titmouse	*Baeolophus bicolor*	X	X
European Starling	*Sturnus vulgaris*	X	
Field Sparrow	*Spizella pusilla*		X
Gull Species	Family Laridae	X	X
Hairy Woodpecker	*Leuconotopicus villosus*		X
House Finch	*Haemorhous mexicanus*	X	
House Sparrow	*Passer domesticus*	X	X
Mallard	*Anas platyrhynchos*	X	
Mourning Dove	*Zenaida macroura*	X	X
Northern Cardinal	*Cardinalis cardinalis*	X	X
Northern Mockingbird	*Mimus polyglottos*	X	
Red-bellied Woodpecker	*Melanerpes carolinus*		X
Red-shouldered Hawk	*Buteo lineatus*		X
Red-tailed Hawk	*Buteo jamaicensis*		X
Red-winged Blackbird	*Agelaius phoeniceus*	X	X
Song Sparrow	*Melospiza melodia*	X	X
White-breasted Nuthatch	*Sitta carolinensis*		X
Wild Turkey	*Meleagris gallopavo*		X
Yellow Shafted Flicker	*Colaptes auratus*	X	X
Breeding Season Residents			
Acadian Flycatcher	*Empidonax virescens*		X
American Redstart	*Setophaga ruticilla*		X
American Woodcock	*Scolopax minor*		X
Barn Swallow	*Hirundo rustica*		X

Table F-7 List of Bird Species Identified at CTARNG Installations during Past Surveys

Common Name	Scientific Name	EHRR	SRMR
Black-and-white Warbler	*Mniotilta varia*	X	X
Chimney Swift	*Chaetura pelagica*	X	X
Chipping Sparrow	*Spizella passerina*	X	X
Common Yellowthroat	*Geothlypis trichas*		X
Eastern Kingbird	*Tyrannus tyrannus*	X	
Eastern Phoebe	*Sayornis phoebe*	X	X
Eastern Wood-pewee	*Contopus virens*	X	X
Gray Catbird	*Dumetella carolinensis*	X	X
Great Crested Flycatcher	*Myiarchus crinitus*		X
Hooded Warbler	*Setophaga citrina*		X
House Wren	*Troglodytes aedon*	X	X
Indigo Bunting	*Passerina cyanea*	X	X
Northern Oriole	*Icterus galbula*	X	X
Osprey	*Pandion haliaetus*	X	
Ovenbird	*Seiurus aurocapilla*	X	X
Prairie Warbler	*Setophaga discolor*		X
Red-eyed Vireo	*Vireo olivaceus*	X	X
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	X	X
Scarlet Tanager	*Piranga olivacea*	X	X
Spotted Sandpiper	*Actitis macularius*		X
Veery	*Catharus fuscescens*		X
Warbling Vireo	*Vireo gilvus*	X	X
Whip-poor-will[1]	*Antrostomus vociferus*		X
White-eyed Vireo	*Vireo griseus*		X
Wood Thrush	*Hylocichla mustelina*	X	X
Worm-eating Warbler	*Helmitheros vermivorum*		X
Yellow Warbler	*Setophaga petechia*		X
Yellow-billed Cuckoo[2]	*Coccyzus americanus*		X
Yellow-throated Vireo	*Vireo flavifrons*		X
Winter Residents			
American Tree Sparrow	*Spizelloides arborea*	X	
Dark-eyed Junco	*Junco hyemalis*	X	X
Pine Siskin	*Spinus pinus*		X
White-throated Sparrow	*Zonotrichia albicollis*	X	

Source: Gomez 2006
Note: SRMR= Stone's Ranch, EHRR= East Haven Rifle Range
1 – Connecticut Species of Concern
2 – Federal Candidate Species

Table F-8 List of Mammal Species Identified at CTARNG Installations Past Surveys

Common Name	Scientific Name	EHRR	SRMR
Big Brown Bat	*Eptesicus fuscus*	X	X
Coyote	*Canis latrans*	X	X
Eastern Chipmunk	*Tamias striatus*		X
Eastern Cottontail	*Sylvilagus floridanus*	X	
Elliot's Short-tailed Shrew	*Blarina hylophaga*	X	X
Gray Squirrel	*Sciurus carolinensis*	X	X
Hoary Bat[2]	*Lasiurus cinereus*		X
House Mouse	*Mus musculus*	X	
Northern Long-eared Bat[1]	*Myotis septentrionalis*		X
Little Brown Bat[3,4]	*Myotis lucifugus*		X
Masked Shrew	*Sorex cinereus cinereus*		X
Meadow Jumping Mouse	*Zapus hudsonius*		X
Meadow Vole	*Microtus pennsylvanicus*		X
Myotis Spp.[5]	*Myotis* spp.	X	X
Oppossum	*Didelphis virginiana*		X
Raccoon	*Procyon lotor*	X	X
Red Bat[2]	*Lasiurus borealis*	X	X
Red Squirrel	*Tamiasciurus hudsonicus*		X
Silver-haired Bat[2]	*Lasionycteris noctivagans*		X
Smoky Shrew	*Sorex fumeus*		X
Southern Bog Lemming[2]	*Synaptomys cooperi*		X
Southern Flying Squirrel	*Glaucomys volans*		X
Star Nosed Mole	*Condylura cristata*		X
Striped Skunk	*Mephitis mephitis*		X
White-footed Mouse	*Peromyscus leucopus*	X	X
White-tailed Deer	*Odocoileus virginianus*	X	X

Source: Gomez 2006; CT DEEP 2019b; UCONN 1999
Note: SRMR= Stone's Ranch, EHRR= East Haven Rifle Range
1 – Federally Threatened Species
2 – Connecticut Species of Concern
3 – Connecticut Endangered Species
4 – At-risk species under review for listing under ESA (USFWS 2020d)
5 – Noted by echolocation calls, which cannot distinguish *Myotis lucifugus*, *M. leibii leibii (*Connecticut Species of Concern), or *M. sodalis* (Federally Endangered)

Table F-9 List of Amphibian Species Identified at CTARNG Installations during 2006 Surveys

Common Name	Scientific Name	EHRR	SRMR
American Toad	*Bufo americanus*		X
Bullfrog	*Rana catesbeiana*		X
Eastern Newt	*Notophthalmus viridescens*		X
Four-Toed Salamander	*Hemidactylium scutatum*		X
Fowler's Toad	*Bufo fowleri*	X	X
Gray Tree Frog	*Hyla versicolor*	X	X
Green Frog	*Rana clamitans melanota*	X	X
Jefferson Salamander Complex[1]	*Ambystoma jeffersonianum*		X
Marbled Salamander	*Ambystoma opacum*		X
Northern Leopard Frog[1]	*Rana pipiens*	X	
Northern Redback Salamander	*Plethodon cinereus*		X
Northern Spring Peeper	*Pseudacris crucifer crucifer*		X
Northern Two-lined Salamander	*Eurycea bislineata*		X
Pickerel Frog	*Rana palustris*		X
Spotted Salamander	*Ambystoma maculatum*		X
Spring Peeper	*Pseudacris crucifer*	X	
Wood Frog	*Rana sylvatica*	X	X

Source: Gomez 2006; UCONN 1999
Note: SRMR= Stone's Ranch, EHRR= East Haven Rifle Range
1 – Connecticut Species of Concern

Table F-10 List of Reptiles Species Identified at CTARNG Installations during Past Surveys

Common Name	Scientific Name	EHRR	SRMR
Black Rat Snake	*Elaphe obsoleta obsoleta*	X	X
Common Snapping Turtle	*Chelydra serpentina serpentina*		X
Eastern Box Turtle[1]	*Terrapene carolina carolina*	X	
Eastern Garter Snake	*Thamnophis sirtalis sirtalis*		X
Eastern Racer	*Coluber constrictor*		X
Northern Ring-necked Snake	*Diadophis punctatus edwardsii*	X	X
Northern Water Snake	*Nerodia sipedon sipedon*		X
Painted Turtle	*Chrysemys picta*	X	X
Spotted Turtle[1,2]	*Clemmys guttata*	X	

Source: Gomez 2006; UCONN 1999
Note: SRMR= Stone's Ranch, EHRR= East Haven Rifle Range
1 – Connecticut Species of Concern
2 – At-risk species

APPENDIX G – NATURAL RESOURCES PROGRAM MANAGEMENT

The INRMP Program has been organized to ensure the implementation of year-round, cost-effective management activities and projects that meet the requirements of the CTARNG. The Sikes Act requires that INRMPs provide for no net loss in the capability of military installation lands to support the military mission of the installation. Professionally trained natural resources management staff and natural resources enforcement are needed to implement this INRMP. The Sikes Act Improvement Act Section 670g defines a "professional" as one who has an undergraduate degree or graduate degree in a natural resources-related science.

Since the 2006 INRMP there have been no substantive changes to the installation natural resource programs.

1.1 EXISTING CONDITIONS

In order to fully support and sustain its military mission at these two installations, the CTARNG must manage, protect, and enhance the biological integrity of its lands. The CTARNG mission includes both federal and state components. The primary federal mission of the CTARNG is to train and equip units capable of immediate expansion to war strength. These units must be available for service in time of war or national emergency, or when activated to augment the active Army. The primary state mission is to support and train civil authorities in the protection of life and property and the preservation of peace, order, and public safety under competent orders from state authorities. In order to accomplish these missions, the CTARNG requires a sufficient area of land. Given the small area and large population of the state of Connecticut, the availability of training land is limited. Therefore, the natural resources and open areas contained within existing training sites, particularly SRMR, are some of the most valuable assets of the CTARNG. Sustainable use of these lands can be achieved through management of sound natural resource programs integrated into installation mission activities.

Natural resources stewardship is the management of natural resources with the goal of maintaining or increasing the resource's value indefinitely into the future. The stewardship goal of the CTARNG is to sustain multiple uses of natural resources over the long-term, while promoting the health of the ecosystems in which these activities occur. Multiple uses include, but are not limited to mission activities, forestry, outdoor recreation, aesthetics, and ecosystem preservation. Natural resources management at these installations is conducted by natural resources program, installation personnel, and other installation stakeholders. Coordination with installation operators and consistency of natural resources management goals and objectives developed in the INRMP with other installation operational plans and documents will ensure that natural resources management can be implemented successfully in a manner consistent with the mission of CTARNG.

1.2 INRMP MANAGEMENT GOALS AND OBJECTIVES

Natural resources program management involves maintaining or enhancing both the missionscape and the ecological integrity of SRMR and EHRR. The natural resource management goals, objectives, and projects are listed below. These goals focus on supporting the natural resources program in conserving and enhancing biodiversity and natural resources of these installations.

The following goals apply to NRP projects listed for SRMR and EHRR in Appendix D, Table D-1.

NRP GOAL 1: SUPPORT NATURAL RESOURCES MANAGEMENT PERSONNEL AND TRAINING

NRP OBJECTIVE 1.1: Fund existing and additional personnel positions to support natural resource management needs at SRMR and EHRR.

NRP OBJECTIVE 1.2: Fund ongoing training for Natural Resource Program personnel in wildlife and natural resource management and other personnel who conduct natural resource training.

NRP GOAL 2: DEVELOP AND MAINTAIN PARTNERSHIPS FOR NATURAL RESOURCES RESEARCH

NRP OBJECTIVE 2.1: Develop relationships with natural resources agencies, universities, and other groups to allow for natural resources research on CTARNG Installations.

NRP GOAL 3: CONDUCT AN ANNUAL REVIEW OF THE INRMP

NRP OBJECTIVE 3.1: Coordinate with installation organizations to ensure there is an understanding of management goals and actions developed in the INRMP and to ensure that management actions developed in the INRMP are consistent with current management instructions and plans.

NRP OBJECTIVE 3.2: Conduct annual external stakeholder review and update the INRMP as needed based on pertinent review findings.

APPENDIX H – FISH AND WILDLIFE MANAGEMENT

Wildlife management is defined as manipulation of the environment and wildlife populations to produce desired objectives. Management can be performed in a manner that enhances biodiversity through the reestablishment of native habitats. Conversely, habitat management could be required to decrease the abundance of certain wildlife species to reduce animal damage. AR 200-1 requires the conduct of Army habitat management efforts in a manner that conserves and enhances biological diversity, while being consistent with Army goals to accomplish the military mission. The regulation also requires that the management of environmentally sensitive areas and areas of special management concern receive primary consideration.

1.1 EXISTING CONDITIONS

The Environmental Management Branch of the FMO is primarily responsible for the Fish and Wildlife Management Program. The Environmental Program Manager and the Natural Resources Manager coordinate planning, budgets, and general administrative functions of the program. USFWS and CT DEEP provide technical assistance and guidance on fish and wildlife management issues. In accordance with the overall natural resource management approach of the CTARNG, fish and wildlife management focuses on protecting and enhancing biodiversity through ecosystem management. Biodiversity consists of all elements of the natural environment and ecosystem management is a tool that encourages management decisions to focus on natural resources at a community or ecosystem level rather than at a single species level. By maintaining or improving the quality, integrity, and connectivity of the ecosystem, individual species should prosper. While species-specific management actions are implemented under the Fish and Wildlife Management Program, they are done so within the broader context of ecosystem management.

Conducting natural resources inventories and monitoring are important components of wildlife management at SRMR and EHRR. Inventory and monitoring activities provide the information necessary to identify potential management issues, develop appropriate management actions, and measure the success of management actions. This INRMP identifies specific wildlife management issues based on information from the recent floral, faunal, and wetlands surveys conducted at these installations. Current management is focused primarily on protecting and improving overall habitat quality and biodiversity.

For information on the fish and wildlife species and habitats found at these CTARNG installations, please see Appendix F – Ecosystems and the Biotic Environment.

1.1.1 Stone's Ranch Military Reservation

Management of wildlife at SRMR includes specific management activities that address a variety of species and their habitats. In accordance with Army and National Guard Bureau policy, CTARNG implements an ecosystem management approach to wildlife and fish management. Therefore, the focus is on habitat management and overall ecosystem health rather than management for a particular species or group of animals. Management of fish and wildlife at SRMR was managed differently for game and non-game species in the 2006 INRMP, but since no hunting program is currently operated an ecosystem approach applies to all wildlife management.

As part of managing for habitat and ecosystem health, CTARNG manages grassland habitat at SRMR. Natural grassland communities are rare in Connecticut, and these areas are critical to supporting grassland bird species that are experiencing declines in New England. Managing open areas at SRMR is also necessary to support training. Grasslands are maintained by annual mowing to reinvigorate warm season grasses, suppress woody vegetation, and provide wildlife cover. Forest habitats are managed at SRMR based on the FMP (Component Plan A) and the FSP (Component Plan B).

1.1.2 East Haven Rifle Range

Management of forest and grassland wildlife habitat at EHRR is undertaken in a manner similar to SRMR. Mowing is done to support open areas for bird habitat as well as eastern box turtle habitat. Forested habitat at EHRR is managed in accordance with the FSP (Component Plan B).

1.2 INRMP MANAGEMENT GOALS AND OBJECTIVES

Wildlife management can be employed to enhance biodiversity and wildlife habitat through the reestablishment and maintenance of native habitats. The variety of habitats present on the installations (e.g., wetland complexes, upland forests, grasslands) contributes to the diversity of species found on each installation. The primary goal of fish and wildlife management is to restore and maintain wildlife diversity in areas where practicable conservation measures are implemented so that they are not in direct conflict with the military mission.

1.2.1 Stone's Ranch Military Reservation

The following goals apply to FWM projects listed for SRMR in Appendix D, Table D-1.

FWM GOAL 1: COMPLETE BIOLOGICAL SURVEYS TO MONITOR FAUNA AND FLORA RESOURCES PRESENT ON SRMR

FWM OBJECTIVE 1.1: Conduct fauna surveys at SRMR to assess avian, mammalian, herpetofauna, and insect species and populations. Complete surveys for targeted species or faunal groups where past studies have not been as comprehensive.

FWM GOAL 2: ENHANCE AND RESTORE GRASSLAND AREAS AT SRMR TO SUPPORT POLLINATOR AND GRASSLAND BIRD COMMUNITIES

FWM OBJECTIVE 2.1: Identify open areas and fallow fields at SRMR that are suitable for restoration as grassland habitat to support pollinators as a pollinator garden, and design and implement restoration strategies.

FWM GOAL 3: ENHANCE AND RESTORE FORESTED HABITAT AT SRMR TO SUPPORT WILDLIFE HABITAT

FWM OBJECTIVE 3.1: In accordance with the FMP (Component Plan A), and FSP (Component Plan B), undertake measures to inventory forest condition and health and

implement measures to enhance forest habitat. This will be achieved through the projects proposed in Forest Management (FM) found in Appendix D.

FWM GOAL 4: ENHANCE HABITAT FOR FAUNAL SPECIES THROUGH HABITAT IMPROVEMENTS AND PROJECTS

FWM OBJECTIVE 4.1: Working with stakeholders and as a public outreach project, install bat boxes and wood duck boxes to provide additional habitat for these valuable species at SRMR.

FWM OBJECTIVE 4.2: Determine if the existing root cellar at SRMR would be suitable as a potential bat hibernaculum.

1.2.2 East Haven Rifle Range

The following goals apply to FWM projects listed for EHRR in Appendix D, Table D-1.

FWM GOAL 5: ENHANCE AND RESTORE GRASSLAND AREAS AT EHRR TO SUPPORT POLLINATOR AND GRASSLAND BIRD COMMUNITIES

FWM OBJECTIVE 5.1: Identify open areas and fallow fields at EHRR that are suitable for restoration as grassland habitat to support pollinators as a pollinator garden, and design and implement restoration strategies.

FWM GOAL 6: ENHANCE AND RESTORE FORESTED HABITAT AT EHRR TO SUPPORT WILDLIFE HABITAT

FWM OBJECTIVE 6.1: In accordance with the FSP (Component Plan B), undertake measures to inventory forest condition and health and implement measures to enhance forest habitat.

FWM GOAL 7: ENHANCE HABITAT FOR FAUNAL SPECIES THROUGH HABITAT IMPROVEMENTS AND PROJECTS

FWM OBJECTIVE 7.1: Working with stakeholders and as a public outreach project, install bat boxes and wood duck boxes to provide additional habitat for these valuable species at EHRR.

FWM GOAL 8: COMPLETE BIOLOGICAL SURVEYS TO MONITOR FAUNA AND FLORA RESOURCES PRESENT ON EHRR

FWM OBJECTIVE 8.1: Conduct fauna surveys at EHRR to assess avian, mammalian, herpetofauna, and insect species and populations. Complete surveys for targeted species or faunal groups where past studies have not been as comprehensive.

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APPENDIX I - OUTDOOR RECREATION AND PUBLIC ACCESS TO NATURAL RESOURCES

Whenever practical, Army lands with suitable natural resources will be managed to allow for outdoor recreational opportunities. Installations having natural resources suitable to outdoor recreation in addition to hunting, fishing, and trapping are encouraged to develop agreements with appropriate state and federal agencies to facilitate the development and management of those programs. Public access to Army properties for outdoor recreation will be allowed whenever compatible with public safety and mission activities. Natural resources used for outdoor recreation on Army land are considered part of the land and belong to the public. DoDI 4715.03, *Natural Resources Conservation Program*, states that installations should "implement a program for the development, enhancement, operation, and maintenance of outdoor recreation resources at all appropriate military installations. These resources shall be made available to the public whenever feasible."

1.1 EXISTING CONDITIONS

1.1.1 Stone's Ranch Military Reservation

CTARNG formerly managed a public hunting program at SRMR, and the 2006 INRMP included management projects to optimize deer hunting. This program was intended to contribute to stabilizing deer populations and alleviating the browsing pressure of high deer densities. However, the hunting program at SRMR has been discontinued due to the low participation and amount of time needed to manage the program. Currently, no hunting or fishing occurs at SRMR, and public access is limited.

1.1.2 East Haven Rifle Range

EHRR is not open to public access, and no outdoor recreational activities occur on the installation.

1.2 INRMP MANAGEMENT GOALS AND OBJECTIVES

There is the potential for outdoor recreation opportunities at SRMR and EHRR, but these activities are limited due to the dangers associated with the installations' mission. The level of enjoyment that is derived from these activities is directly related to the quality of the natural resources present. Maintaining a quality outdoor recreation program, if developed, is dependent on proper management of natural resources and efficient program administration and oversight.

1.2.1 Stone's Ranch Military Reservation

The following goals apply to OR projects listed for SRMR in Appendix D, Table D-1.

OR GOAL 1: IF FEASIBLE, PROVIDE QUALITY HUNTING EXPERIENCES WHILE SUSTAINING ECOSYSTEM INTEGRITY AND PUBLIC SAFETY. ENSURE THAT HUNTING ACTIVITIES ARE NOT IN CONFLICT WITH MISSION PRIORITIES.

> **OR OBJECTIVE 1.1:** Develop an internal recreational hunting program at SRMR to provide outdoor recreation opportunities and control deer populations to promote ecosystem health.

1.2.2 East Haven Rifle Range

No outdoor recreational program currently exists at EHRR, and no goals for outdoor recreation are proposed at this installation.

APPENDIX J – MANAGEMENT OF THREATENED AND ENDANGERED SPECIES AND HABITATS

1.1 EXISTING CONDITIONS

The Environmental Management Branch in the FMO is responsible for the Rare Species Management Program. The Environmental Program Manager and the Natural Resources Manager coordinate program activities, as necessary. USFWS and CT DEEP provide guidance on rare species management issues and projects. The program ensures compliance with ESA and Chapter 495 of the General Statutes of Connecticut – Endangered Species (CGS Ann §§ 26-303 et seq.). State endangered and threatened species are protected by the Connecticut Endangered Species Act, which applies to Connecticut Military Department activities on state-owned lands. The purpose of the Act is to conserve, protect, restore, and enhance any endangered or threatened species. The Act requires that any action authorized, funded, or performed by state agencies cannot threaten the continued existence of any state endangered or state threatened species. The Act prohibits the taking of an endangered or threatened species from public property and waters of the state.

State agencies are required to consult with the CT DEEP Natural Diversity Data Base (NDDB) by requesting an environmental review of proposed projects or activities. The NDDB maps provide a pre-screening tool to indicate approximate locations of state and federally listed species and significant natural communities. Projects or activities proposed in these areas require the submittal of a *Request for Natural Diversity Data Base (NDDB) State Listed Species Review Form* (DEEP-APP-007) and supplemental materials for NDDB review. CT DEEP then provides recommendations to avoid impacts to state-listed species. In addition, the CT DEEP commissioner may prohibit, in an emergency, the taking of any state species of special concern for commercial, recreational, scientific, educational, or private purposes. An emergency allowing for this action includes the species being threatened from over utilization. The Federal ESA of 1973 applies to federal endangered and federal threatened species and supersedes the Connecticut Endangered Species Act for these species. Potential impacts to federally listed species may require additional consultation with the USFWS.

Two ESA-listed species have been identified as potentially occurring at CTARNG installations (USFWS 2020a), the northern long-eared bat and the small whorled pogonia. The northern long-eared bat was identified at SRMR in 2006 during faunal surveys on scanned datasheets (Gomez 2006), but was not observed in 2019 acoustic bat surveys (CT DEEP 2019b). The small whorled pogonia has not been observed at SRMR or EHRR in past flora surveys. Further descriptions can be found in Appendix F. Comprehensive flora and fauna surveys conducted in 2006 and 2007 (Hastings 2008; Gomez 2006) found state-listed species at SRMR and EHRR, while additional species were documented in surveys in 1999 (UCONN 1999). Tables F-2 and F-3 in Appendix F lists each species, their status and location. At-risk species are also discussed in Table F-4.

1.1.1 Stone's Ranch Military Reservation

SRMR had one occurrence of a federally listed northern long-eared bat on site, and 20 state-listed species or species of special concern. The northern long-eared bat and small whorled pogonia are listed as potentially occurring at SRMR. Management is undertaken to protect the northern long-

eared bat through the implementation vegetation clearing measures outlined in the 4(d) rule of the ESA listing for this species (USFWS 2016b).

1.1.2 East Haven Rifle Range

EHRR has no known federally listed species; however, northern long-eared bat is listed as potentially occurring on site. Nine state-listed species have been observed in past surveys at EHRR, including three bat species (red bat, eastern small footed bat, and little brown bat), the eastern meadowlark, three species of reptiles and amphibians (northern leopard frog, eastern box turtle, and spotted turtle), and two flora species (sweet-scented Indian plantain and northern white cedar). Management of mowing is completed to best minimize impacts to the eastern box turtle and to support nesting habitat at EHRR, based on a 2011 Memorandum for Record (CTARNG 2011). CTARNG has limited or discontinued mowing at the old 203 Range, with occasional trimming to keep vegetation low, and mowing is done in November, if possible, after hibernation (CTARNG 2011). In addition, management measures are needed to support the sweet-scented Indian plantain, which is currently threatened by encroachment of mugwort.

1.2 INRMP MANAGEMENT GOALS AND OBJECTIVES

The overall goal of the program is to ensure compliance with the Endangered Species Act and Connecticut endangered species regulations, as well as to protect and enhance rare species populations and their habitats. Management criteria for the program include the following:

- Avoid impacts to state-listed and rare species and their habitat; and
- Maintain existing population levels and habitat, and where feasible increase populations and enhance habitat, including meadows, wetlands, and riparian areas.

1.2.1 Stone's Ranch Military Reservation

The following goals apply to TE projects listed for SRMR in Appendix D, Table D-1.

TE GOAL 1: SUPPORT THE CONSERVATION AND ADAPTIVE MANAGEMENT OF THREATENED AND ENDANGERED SPECIES AT SRMR

TE OBJECTIVE 1.1: Continue ongoing efforts to monitor and manage endangered and threatened bat populations at SRMR.

TE OBJECTIVE 1.2: Continue ongoing efforts to monitor and manage endangered and threatened species at SRMR. This will be completed through the proposed projects and through the implementation of habitat restoration activities and survey activities proposed in Fish and Wildlife Management (Appendix H) and Forest Management (Appendix N).

1.2.2 East Haven Rifle Range

The following goals apply to TE projects listed for EHRR in Appendix D, Table D-1.

TE GOAL 2: SUPPORT THE CONSERVATION AND ADAPTIVE MANAGEMENT OF THREATENED AND ENDANGERED SPECIES AT EHRR

TE OBJECTIVE 2.1: Continue ongoing efforts to monitor and manage endangered and threatened bat populations at EHRR.

TE OBJECTIVE 2.2: Continue ongoing efforts to monitor and manage for the eastern box turtle population at EHRR.

TE OBJECTIVE 2.3: Continue ongoing efforts to monitor, conserve, and manage for the sweet-scented Indian plantain at EHRR.

TE OBJECTIVE 2.4: Initiate efforts to better understand the northern leopard frog population at EHRR.

TE OBJECTIVE 2.5: Continue ongoing efforts to monitor and manage endangered and threatened species at EHRR. This will be completed through the proposed projects and through the implementation of habitat restoration activities and survey activities proposed in Fish and Wildlife Management (Appendix H) and Forest Management (Appendix N).

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APPENDIX K - WATER RESOURCES PROTECTION

As part of the Long Island Sound watershed, management and protection of water resources is integral to the health of waters on CTARNG installations and in the region. Water resources include surface water, wetlands, floodplains, coastal zones, groundwater, and stormwater but this section only addresses surface water, groundwater, and stormwater. Management and goals for wetlands and floodplains are discussed in Appendix L – Wetland Protection.

The surface water and groundwater resources present at SRMR and EHRR are described in greater detail in Appendix E – Physical Environment.

1.1 EXISTING CONDITIONS

Water resources at CTARNG installations are managed in accordance with measures to provide water quality and watershed protection through the use of an ecosystem management approach. Measures for water protection overlap other management areas, including grounds maintenance, wetlands protection, forest management, and fish and wildlife management. Water quality management at these installations includes adherence to the federal and state surface water protections, as well as the Spill Prevention, Control, and Countermeasures Plans and Stormwater Pollution Prevention Plans. Measures to protect water quality of surface water include:

- Minimize erosion impacts from road building/maintenance operations;
- Maintain riparian buffers;
- Coordinate with existing activities of the Office of Long Island Sound Programs when possible; and
- Support Pollution Prevention Plan; Spill Prevention, Control and Countermeasures Plan; and Stormwater Management Plan in coordination with Environmental Office.

1.1.1 Stone's Ranch Military Reservation

Water resource management challenges at SRMR include the control of erosion from roads, trails, and heavily used training areas into waterbodies, and maintaining a comprehensive program for scheduling road maintenance and rehabilitation. To address these issues, BMPs are employed, such as the use of hay bales, silt fences, sedimentation basins, and/or riprap to minimize erosion. BMPs are used along the edges of recently maintained or constructed roads, particularly near wetlands or streams. This INRMP identifies projects to target areas of the greatest erosion risk.

1.1.2 East Haven Rifle Range

Water resource protection at EHRR include the maintenance of riparian buffers to protect the Farm River. This buffer is vegetated in areas where clearance is not required for mission activities.

1.2 INRMP MANAGEMENT GOALS AND OBJECTIVES

The water resource protection objectives and actions presented in this INRMP are designed to ensure that the use, extraction, and transfer of water resources does not impact natural resources. These goals also work to reduce/control nutrient and sediment inputs into the watershed and groundwater while supporting mission activities. In addition, these goals seek to minimize nonpoint source pollution of both surface water and groundwater in the watershed.

1.2.1 Stone's Ranch Military Reservation

The following goals apply to WRP projects listed for SRMR in Appendix D, Table D-1.

WRP GOAL 1: IMPLEMENT NATURAL RESOURCE MANAGEMENT AT SRMR IN A MANNER THAT SUPPORTS WATER RESOURCES AND ENSURES COMPLIANCE WITH WATER QUALITY STANDARDS

WRP OBJECTIVE 1.1: Ensure that infrastructure and facilities at SRMR are designed to support the protection of water resources.

WRP OBJECTIVE 1.2: Ensure that mission activities and natural resource management supports the protection of water resources at SRMR.

WRP OBJECTIVE 1.3: Ensure that activities at SRMR remain compliant with existing plans and state and federal water quality regulations.

1.2.2 East Haven Rifle Range

The following goals apply to WRP projects listed for EHRR in Appendix D, Table D-1.

WRP GOAL 2: IMPLEMENT NATURAL RESOURCE MANAGEMENT AT EHRR IN A MANNER THAT SUPPORTS WATER RESOURCES AND ENSURES COMPLIANCE WITH WATER QUALITY STANDARDS

WRP OBJECTIVE 2.1: Ensure that mission activities and natural resource management supports the protection of water resources at EHRR.

WRP OBJECTIVE 2.2: Ensure that activities at EHRR remain compliant with existing plans and state and federal water quality regulations.

APPENDIX L – WETLAND PROTECTION

Wetlands are protected as a subset of the "waters of the United States" under Section 404 of the CWA. The term "waters of the United States" has broad meaning under the CWA and incorporates deep water aquatic habitats and special aquatic habitats (including wetlands). Jurisdictional waters of the United States are areas regulated under the CWA and also include coastal and inland waters, lakes, rivers, ponds, streams, intermittent streams, vernal pools, and "other" waters that if degraded or destroyed could affect interstate commerce. Wetland areas at the installations are also regulated under EO 11990 – *Wetland Protection*, EO 11988 – *Floodplain Protection*, and applicable state regulations, including Connecticut General Statutes on Wetlands and Watercourses (§§ 22a-28 through 22a-45). Connecticut regulates activities affecting inland wetlands and watercourses under the Inland Wetlands and Watercourses Act, which includes rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs, and all other bodies of water (natural or artificial, vernal or intermittent, public or private) that are contained within, flow through, or border upon the state. Property owners are required to obtain permits before conducting development activities in all areas protected under the CWA, the Connecticut Inland Wetlands and Watercourses Act, and the preservation of tidal wetlands under Connecticut general statutes.

The wetland resources present at SRMR and EHRR are described in greater detail in Appendix E – Physical Environment.

1.1 EXISTING CONDITIONS

The Wetlands Management Program is primarily the responsibility of the Environmental Management Branch in the FMO. The staff of the Environmental Management Branch handles all aspects of wetlands management at the two CTARNG installations, including wetland delineation, inventorying, mapping, permitting, and mitigation, if necessary. This program is integrated with the Installation Master Planning, and Range and Training Land Program processes through continuous coordination with the FMO and Training Site Managers. In addition, individual training site users are responsible for ensuring that their activities do not impact wetlands. When necessary, the Environmental Management Branch coordinates wetland permitting and management activities with federal and state agencies such as the USACE, USFWS, and CT DEEP. Jurisdictional wetlands are delineated on a project-specific basis, and an installation-wide delineation was last conducted at SRMR in 1999.

The Sikes Act requires no net loss of wetlands. In the event that future training or development activities cannot avoid impacts to wetlands, then the CTARNG may address wetland impacts through mitigation. Wetland mitigation refers to the restoration, creation, enhancement, and preservation of wetlands for the express purpose of providing advance compensation of unavoidable wetland losses due to development activities. Mitigation is generally undertaken to achieve the goal of "no-net-loss" of wetlands.

1.2 INRMP MANAGEMENT GOALS AND OBJECTIVES

The objectives and actions for wetlands protection presented in this INRMP are designed to ensure that management and mission activities result in no net loss of wetlands. These goals also seek to

protect and enhance the biodiversity, functions, values, and habitat availability of wetland communities at CTARNG installations.

1.2.1 Stone's Ranch Military Reservation

The following goals apply to WP projects listed for SRMR in Appendix D, Table D-1.

WP GOAL 1: ENSURE WETLAND PROTECTION, RESTORATION, AND COMPLIANCE WITH SECTIONS 404 AND 401 OF THE FEDERAL CLEAN WATER ACT AND CONNECTICUT GENERAL STATUTES ON WETLANDS AND WATERCOURSES (§§ 22A-28 THROUGH 22A-45) AT SRMR

WP OBJECTIVE 1.1: Implement measures to protect, promote, and maintain functional wetlands at SRMR in accordance with wetland regulations while allowing for mission activities and natural resource management.

1.2.2 East Haven Rifle Range

The following goals apply to WP projects listed for EHRR in Appendix D, Table D-1.

WP GOAL 2: ENSURE WETLAND PROTECTION, RESTORATION, AND COMPLIANCE WITH SECTIONS 404 AND 401 OF THE FEDERAL CLEAN WATER ACT AND CONNECTICUT GENERAL STATUTES ON WETLANDS AND WATERCOURSES (§§ 22A-28 THROUGH 22A-45) AT EHRR

WP OBJECTIVE 2.1: Implement measures to protect, promote, and maintain functional wetlands at EHRR in accordance with wetland regulations while allowing for mission activities and natural resource management.

APPENDIX M - GROUNDS MAINTENANCE

Ground maintenance activities at CTARNG installations are primarily the responsibility of the training site manager and grounds maintenance staff, working in coordination with the Environmental Management in FMO to ensure that activities are conducted in a manner protective of natural resources. Activities that have the potential to impact environmentally sensitive areas are coordinated with appropriate regulatory agencies, including USFWS, CT DEEP, and USACE.

1.1 EXISTING CONDITIONS

Routine grounds maintenance activities include road grading, routine mowing and maintenance of vegetation, erosion control, invasive species control, and target maintenance and development. These activities are undertaken to maintain and improve the overall biodiversity and ecosystem health and to maintain training lands for the mission. The goal of the program is to maintain grounds at the levels and intensities necessary to meet the designated use criteria, protect and enhance the natural resources, and ensure a pleasing appearance in harmony with the natural landscape.

The grounds maintenance practices at CTARNG installations have largely not changed since the 2006 INRMP was prepared. Changes since that time include development of stormwater infrastructure as part of a zero net increase stormwater system. Currently, mowing and other vegetation maintenance activities are undertaken to promote habitat for listed species, including the eastern box turtle at EHRR. Mowing is limited seasonally in some areas to protect listed species. Primary maintenance activities include grass mowing and leaf removal.

1.2 INRMP MANAGEMENT GOALS AND OBJECTIVES

Grounds maintenance personnel perform maintenance activities to maintain roads and trails, reduce pest presence, support listed species habitat, and maintain vegetation. Grounds maintenance manages mowing and other mechanical vegetation control measures that are used to support habitat and ecosystem objectives at CTARNG installations.

1.2.1 Stone's Ranch Military Reservation

The following goals apply to GM projects listed for SRMR in Appendix D, Table D-1.

GM GOAL 1: MANAGE GROUNDS AT SRMR TO PROMOTE NATURAL HABITAT AND NATIVE SPECIES

GM OBJECTIVE 1.1: Provide support to grounds maintenance in ongoing habitat management activities, including mowing and other vegetation management as well as erosion control and road maintenance.

1.2.2 East Haven Rifle Range

The following goals apply to GM projects listed for EHRR in Appendix D, Table D-1.

GM GOAL 2: MANAGE GROUNDS AT EHRR TO PROMOTE NATURAL HABITAT AND NATIVE SPECIES

GM OBJECTIVE 2.1: Provide support to grounds maintenance in ongoing habitat management activities, including mowing and other vegetation management as well as erosion control and road maintenance.

APPENDIX N – FOREST MANAGEMENT

Certain aspects of the Forest Management Program are required by AR 200-1 – *Environmental Protection and Enhancement*. Federal regulations pertaining to forest management include the Endangered Species Act of 1973, as amended, and the National Environmental Policy Act. Commercial forestry activities are subject to review and approval by the CT DEEP Land and Water Resources Division. CT DEEP also provides guidance on implementing BMPs.

1.1 EXISTING CONDITIONS

The Forest Management Program is primarily the responsibility of the Environmental Management Branch in the FMO. The staff of the Environmental Management Branch oversees forest inventorying, monitoring, harvesting, and regeneration at all installations. The Training Site Commander and grounds maintenance staffs at individual installations are responsible for the maintenance needs of both urban and natural forest stands. When necessary, the Environmental Management Branch coordinates forest management activities with federal and state agencies such as USACE, USFWS and CT DEEP.

The Forest Management Program is designed to maintain, restore, and manage forest lands on an ecosystem basis. It addresses issues related to the management of natural, commercial, and urban forests at all CTARNG installations. The management of natural and commercial forests is applicable to SRMR only under the FMP (Component Plan A), while the management of forests for enhanced ecological health and biodiversity occurs at SRMR and EHRR under the FSP (Component Plan B). Within the tenets of this program, issues related to biodiversity conservation, water quality protection, human health and safety, and pollution prevention are also addressed. Management of forest resources at CTARNG installations is tied to other management goals and objectives in this INRMP.

1.2 INRMP MANAGEMENT GOALS AND OBJECTIVES

The overall goal of the FMP is to employ ecosystem management techniques to promote healthy and diverse forest communities at CTARNG installations. Management criteria for the program include sustaining non-fragmented forest habitat for existing wildlife, ecological values and function of the forested landscape, and protecting real property investments for the installation.

1.2.1 Stone's Ranch Military Reservation

The following goals apply to FM projects listed for SRMR in Appendix D, Table D-1.

FM GOAL 1: MANAGE FOREST STANDS TO SUPPORT NATIVE SPECIES AND PROMOTE FOREST HEALTH AT SRMR

FM OBJECTIVE 1.1: Manage forested habitats to support habitat diversity and non-fragmented forest wildlife habitat, promote rare species, and reduce invasive species presence.

FM OBJECTIVE 1.2: Implement management plans and ensure that management practices are adaptive and current.

1.2.2 East Haven Rifle Range

The following goals apply to FM projects listed for EHRR in Appendix D, Table D-1.

FM GOAL 2: MANAGE FOREST STANDS AND HABITAT TO SUPPORT NATIVE SPECIES AND PROMOTE FOREST HEALTH AT EHRR

FM OBJECTIVE 2.1: Manage forested habitats to support habitat diversity and non-fragmented forest wildlife habitat, promote rare species, and reduce invasive species presence.

FM OBJECTIVE 2.2: Implement management plans and ensure that management practices are adaptive and current.

APPENDIX O – WILDLAND FIRE MANAGEMENT

In accordance with Army policy memorandum *Army Wildland Fire Policy Guidance* (2002), an Integrated Wildland Fire Management Plan (IWFMP) is required for Army installations with unimproved grounds that present a wildfire hazard. Wildland fires are described in AR 200-1 as "any non-structural fire that occurs on unimproved grounds. This includes wildfires and prescribed fires." Under AR 200 1, wildland fire management includes reducing wildfire potential through management; development of an IWFMP; providing adequate training and resources to personnel involved in wildland fire management; and ensuring that only qualified personnel conduct prescribed burns.

1.1 EXISTING CONDITIONS

CTARNG prepared an IWFMP for SRMR and EHRR in 2011; however, it was never finalized and signed. Currently, no prescribed burning, selective thinning, or other fuel management is done on the CTARNG installations. Wildland fire management would aid in preventing an accidental fire that may pose a risk to public safety and nearby communities and reduce fuel loads.

1.2 INRMP MANAGEMENT GOALS AND OBJECTIVES

Successful wildland fire management can be used as a tool to maintain healthy forests and grasslands that promote a diversity of ecosystems and support rare species. Wildland fire management also aids in preventing an accidental fire that may pose a risk to public safety and nearby communities and reduces fuel loads.

1.2.1 Stone's Ranch Military Reservation

The following goals apply to WFM projects listed for SRMR in Appendix D, Table D-1.

WFM GOAL 1: CONDUCT AN UPDATE OF THE IWFMP FOR SRMR.

WFM OBJECTIVE 1.1: Fund an update of the IWFMP to ensure that the document is current and supports wildland fire management at SRMR.

WFM GOAL 2: IMPLEMENT AND SUPPORT WILDLAND FIRE MANAGEMENT PRACTICES AT SRMR FOR HABITAT MAINTENANCE.

WFM OBJECTIVE 2.1: Investigate prescribed burning to support habitat maintenance and habitat mitigation at SRMR.

WFM OBJECTIVE 2.2: Implement prescribed burning to support habitat maintenance and habitat mitigation at SRMR, if deemed feasible for the site.

1.2.2 East Haven Rifle Range

The following goals apply to WFM projects listed for EHRR in Appendix D, Table D-1.

WFM GOAL 3: CONDUCT AN UPDATE OF THE IWFMP FOR EHRR.

WFM OBJECTIVE 3.1: Fund an update of the IWFMP to ensure that the document is current and supports wildland fire management at EHRR.

WFM GOAL 4: IMPLEMENT AND SUPPORT WILDLAND FIRE MANAGEMENT PRACTICES AT EHRR FOR HABITAT MAINTENANCE.

WFM OBJECTIVE 4.1: Investigate prescribed burning to support habitat maintenance and habitat mitigation at EHRR.

WFM OBJECTIVE 4.2: Implement prescribed burning to support habitat maintenance and habitat mitigation at EHRR, if deemed feasible for the site.

APPENDIX P - INTEGRATED PEST MANAGEMENT PROGRAM

The Integrated Pest Management (IPM) Program for SRMR and EHRR is described in the IPM Plan for CTARNG, which was last updated April 2019. The IPM Plan is a comprehensive document used to describe pest management activities performed by and for the CTARNG. The contents of the plan apply to all activities and individuals working, residing, or otherwise doing business on CTARNG installations, and are implemented to the maximum extent possible. Pest management operations are conducted in a manner respectful to the health and safety of personnel and the environment.

The IPM Plan describes the organization's pest management requirements, outlines the resources necessary for surveillance and control, and lists the administrative, safety, and environmental requirements of the program. Pests that are discussed in the plan include cockroaches and other crawling insects (e.g., crickets, earwigs, and ants), medically important pests such as ticks, mosquitoes, rodents, other vertebrate pests, and various plant pests. Without control, these pests could interfere with the military mission, damage real property, increase maintenance costs, and expose installation personnel to diseases. The IPM plan also provides guidelines for the management of invasive and noxious species and undesirable vegetation.

1.1 EXISTING CONDITIONS

Invasive, non-native species and noxious weeds have the capability to significantly impact native vegetation and outcompete native species. Management of undesirable species is necessary to maintain military training areas in usable condition. In addition, uncontrolled animal pests can become health hazards, which could threaten the military mission.

CTARNG has a state contract for the control of ants, roaches, rodents, and other pests. In addition, the application of herbicides and pesticides for invasive species management is done at CTARNG installations by a contractor. Nuisance beavers at CTARNG installations are trapped by the state.

1.1.1 Stone's Ranch Military Reservation

Management of invasive species at SRMR is ongoing. Approximately 24 percent of the vegetation at SRMR was identified as non-native at SRMR during flora surveys in 2006 and 2007 (Hastings 2008). Invasive species were noted in several ecosystems but were particularly prevalent in the disturbed opening habitat. Invasive species that present an ongoing maintenance concern are autumn olive (*Elaeagnus umbellata*), rose of Sharon (*Hibiscus syriacus*), and tree of heaven (*Ailanthus altissima*). Japanese barberry (*Berberis thunbergii*), multiflora rose (*Rosa multiflora*), Japanese honeysuckle (*Lonicera japonica*), Sagebrush (*Artemisia* spp.), Asian bittersweet (*Celastrus orbiculata*), cheatgrass (*Bromus tectorum*), common reed (*Phragmites australis*), and spotted knapweed (*Centaurea maculosa*) are also a concern.

1.1.2 East Haven Rifle Range

Approximately 27 percent of the species identified at EHRR in the 2008 flora survey were considered to be invasive or non-native (Hastings 2008). Many of these species are associated with disturbed openings, and present a management concern, including autumn olive, common

mugwort and other sagebrush species, spotted knapweed, Canada thistle (*Cirsium arvense*), Japanese barberry, garlic mustard (*Alliaria petiolata*), Japanese honeysuckle, Asian bittersweet, purple loosestrife (*Lythrum salicaria*), cheatgrass, common reed, reed canarygrass (*Phalaris arundinacea*), and multiflora rose (Hastings 2008).

1.2 INRMP MANAGEMENT GOALS AND OBJECTIVES

Native plant and animal communities have been adversely impacted by development and the introduction of non-native species. Non-native species are those plants or animal species that were not present during European settlement. Due to aggressive growth habits of many non-native species, the species have become invasive and outcompete the native plants and animals. "An invasive species is defined as a species that is non-native (or alien) to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm or harm to human health" (EO 13112) (U.S. Department of Agriculture 2020). Invasive species put native plants and animals at risk. Invasive plants, which can be both native and non-native, result in the loss of diversity within a local plant community.

DoDI 4150.07, *Pest Management Program*, is a DoD policy to establish and maintain safe, effective, and environmentally sound IPM programs to prevent or control pests and disease vectors that could adversely impact readiness or military operations by affecting the health of personnel or damaging structures, material, or property. The policy set Measures of Merit for pest management, which require each installation to develop an IPM Plan, reduce the amount of pesticides used on the installation, and certify all pesticide applicators. The IPM Plan is provided as Component Plan D.

1.2.1 Stone's Ranch Military Reservation

The following goals apply to IPM projects listed for SRMR in Appendix D, Table D-1.

IPM GOAL 1: CONTROL NON-NATIVE AND INVASIVE SPECIES THROUGHOUT SRMR

- **IPM OBJECTIVE 1.1:** Ensure that the INRMP is consistent with and supports the principles of the IPM Plan, and that the control of invasive and pest species is undertaken in a manner to maximize safety and minimize pesticide use.

- **IPM OBJECTIVE 1.2:** Conduct invasive species surveys to include nuisance and noxious species found on the base, as well as emerging or newly identified invasive species populations.

- **IPM OBJECTIVE 1.3:** Ensure that the IPM Plan is current and addresses invasive species management issues at SRMR.

1.2.2 East Haven Rifle Range

The following goals apply to IPM projects listed for EHRR in Appendix D, Table D-1.

IPM GOAL 2: CONTROL NON-NATIVE AND INVASIVE SPECIES THROUGHOUT EHRR

- **IPM OBJECTIVE 2.1:** Ensure that the INRMP is consistent with and supports the principles of the IPM Plan, and that the control of invasive and pest species is undertaken in a manner to maximize safety and minimize pesticide use.

- **IPM OBJECTIVE 2.2:** Conduct invasive species surveys to include nuisance and noxious species found on the base, as well as emerging or newly identified invasive species populations.

- **IPM OBJECTIVE 2.3:** Ensure that the IPM Plan is current and addresses invasive species management issues at EHRR.

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APPENDIX Q – PUBLIC OUTREACH

Maintaining a quality public outreach program is dependent on military mission, proper management of natural resources, and efficient program administration and oversight. The unique characteristics and needs of military operations make the evaluation criteria more specific and the spectrum of opportunities narrower. People and social uses/needs are an integral part of ecosystem management. The needs of the military mission determine the extent of public outreach activities allowed. Special consideration will be given to protecting critical areas from negative impacts due to public access or ecosystem management activities.

1.1 EXISTING CONDITIONS

Opportunities for public outreach activities are limited at CTARNG installations, but the installations manage resources in a manner intended to minimize public impacts. CTARNG has developed several documents that impose measures or provide management strategies to reduce the impact of mission activities on surrounding communities. For example, CTARNG completed a JLUS with East Lyme to assist with developmental control at SRMR. CTARNG has also developed a Master Plan for these installations and a Noise Management Plan with noise restricted areas at EHRR and SRMR. This document was written with the Public Affairs Office.

1.2 INRMP MANAGEMENT GOALS AND OBJECTIVES

The following goals apply to PO projects listed for SRMR and EHRR in Appendix D, Table D-1.

PO GOAL 1: PROVIDE QUALITY PUBLIC OUTREACH EXPERIENCES, WHILE SUSTAINING ECOSYSTEM INTEGRITY. ENSURE THAT PUBLIC OUTREACH OPPORTUNITIES ARE NOT IN CONFLICT WITH MISSION PRIORITIES.

> **PO OBJECTIVE 1.1:** Engage the surrounding communities and the general public to provide information on and increase awareness of natural resource management activities at CTARNG installations.
>
> **PO OBJECTIVE 1.2:** Develop new opportunities for community outreach at CTARNG installations. Outreach programs that do not conflict with mission priority should be considered.

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APPENDIX R – CLIMATE CHANGE

Climate change can happen on a local level that could impact the military mission. Changes in precipitation and temperature ranges could result in changes to the species of vegetation or wildlife habitat present at CTARNG include increased storm frequency and intensity. Changes related to climate change may also impact training areas. Consider existing information including regional plans, partnerships, or reports that other entities are conducting on assessing and/or implementing climate change adaptation strategies for collaboration of ecosystem management.

1.1 EXISTING CONDITIONS

Connecticut Public Act 18-82, An Act Concerning Climate Change Planning and Resiliency, was signed by the governor in 2018. The act integrates sea level change projections into planning documents. The projections are subject to change not less than every 10 years and are applied to the state's coastal management and flood management laws. The act also expands the definition of "coastal hazard areas" and "coastal boundary." Coastal hazard areas now include areas that are subject to inundation as determined by the most recent sea level rise scenario. Property in the coastal boundary must be flood-proofed. "Flood-proofing" means any combination of structural or nonstructural additions, changes, or adjustments that would reduce or eliminate flood damage to real estate or improved real property, to water and sanitary facilities, and to structures and their contents. New structures or substantially improved structures designed for human habitation within the coastal boundary must include at least two additional feet of freeboard above base flood level plus any additional freeboard to account for the most recent sea level change scenario update.

CTARNG implements measures to reduce energy use, hazardous waste, and greenhouse gas emissions, and improve sustainability. Measures in this INRMP are intended to increase habitat resiliency through the management of natural resources for ecosystem health.

1.2 INRMP MANAGEMENT GOALS AND OBJECTIVES

The following goals apply to CC projects listed for SRMR and EHRR in Appendix D, Table D-1.

CC GOAL 1: INCORPORATE CLIMATE CHANGE ADAPTATION STRATEGIES INTO NATURAL RESOURCE MANAGEMENT

> **CC OBJECTIVE 1.1:** Implement climate change adaptation strategies to target installation-specific areas of concern including but not limited to increased storm severity, flooding, drought, fire, and species range shifts. Incorporate guidance from climate change experts as well as local and regional conservation/land management organizations.

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APPENDIX S – AGENCY CONSULTATION

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STATE OF CONNECTICUT

MILITARY DEPARTMENT

STATE ARMORY, 360 BROAD STREET, HARTFORD,
CONNECTICUT 06105-3780

16 January 2020

Jay Rubinoff
Natural Resources Program Manager
ARNG-IEN
111 South George Mason Drive
Arlington, VA 22204

Subject: **Sikes Act Coordination of the Integrated Natural Resources Management Plan (INRMP) Update for Stone's Ranch Military Reservation, Camp Nett, and East Haven Rifle Range, Connecticut**

Dear Mr. Rubinoff:

This letter is to request your assistance in the review and coordination of the INRMP Update for three Connecticut Army National Guard (CTARNG) installations: Stone's Ranch Military Reservation, Camp Nett, and East Haven Rifle Range. Pursuant to the requirements of the Sikes Act (16 United States Code [U.S.C.] 670a et seq.), the 2006 INRMP is being updated and is currently in the draft stage of development. As you know, the Sikes Act requires the preparation of an INRMP in cooperation with the U.S. Fish and Wildlife Service (USFWS) and the Connecticut Department of Energy and Environmental Protection (CT DEEP). Army Guard Directorate policy for INRMPs also requires engaging the National Marine Fisheries Service (NMFS) if sites covered in the INRMP have the potential to contain species under NMFS jurisdiction. Camp Nett is located on the Niantic River, which supports species under NMFS jurisdiction. In addition, it is required that the resulting plan reflects the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources.

The INRMP recommends various management practices, in compliance with federal, state, and local standards, designed to mitigate negative impacts and to enhance the positive effects of an installation's mission on local ecosystems. The INRMP integrates all aspects of natural resources management with the rest of an installation's mission, and, therefore, is the primary tool for managing ecosystems while ensuring the successful accomplishment of the military mission at the highest possible levels of efficiency. A multiple-use, ecosystem-based management approach is implemented to allow for the presence of mission-oriented activities and the maintenance of environmental quality through the efficient management of natural resources. The INRMP Update for these sites will be developed using an interdisciplinary approach and information and studies gathered from a variety of organizations and since the 2006 INRMP was completed. An INRMP Task Force will be formed and will include CTARNG personnel and individuals from various agencies that have an interest in the management of resources at CTARNG sites.

The Task Force ensures that information concerning the natural resources on or in the vicinity of these installations is accurate and is presented acknowledging local and regional management strategies. We request your attendance at the first Task Force Meeting scheduled for March 2, 2020 at 10:00 AM at the Connecticut National Guard Armory, 360 Broad Street, Hartford, CT 06105. Please confirm if you or a representative of ARNG-IEN will be able to attend the meeting. Visits to the installations, which are located 45 minutes to 1 hour from the Armory, can be scheduled as needed after the meeting. Should you have any questions, please contact Mr. Kent R. Ritter, Natural Resources Manager at kent.r.ritter.nfg@mail.mil or 860-493-2736. We look forward working with ARNG-IEN in this process.

Regards,

Rob Dollak
Environmental Program Manager
CTARNG

STATE OF CONNECTICUT

MILITARY DEPARTMENT

STATE ARMORY, 360 BROAD STREET, HARTFORD,
CONNECTICUT 06105-3780

16 January 2020

Michael Pentony, Regional Administrator
National Oceanic and Atmospheric Administration
Greater Atlantic Regional Fisheries Office
55 Great Republic Drive
Gloucester, MA 01930

Subject: **Sikes Act Coordination of the Integrated Natural Resources Management Plan (INRMP) Update for Stone's Ranch Military Reservation, Camp Nett, and East Haven Rifle Range, Connecticut**

Dear Mr. Pentony:

This letter is to request your assistance in the review and coordination of the INRMP Update for three Connecticut Army National Guard (CTARNG) installations: Stone's Ranch Military Reservation, Camp Nett, and East Haven Rifle Range. Pursuant to the requirements of the Sikes Act (16 United States Code [U.S.C.] 670a et seq.), the 2006 INRMP is being updated and is currently in the draft stage of development. As you know, the Sikes Act requires the preparation of an INRMP in cooperation with the U.S. Fish and Wildlife Service (USFWS) and the Connecticut Department of Energy and Environmental Protection (CT DEEP). Army Guard Directorate policy for INRMPs also requires engaging the National Marine Fisheries Service (NMFS) if sites covered in the INRMP have the potential to contain species under NMFS jurisdiction. Camp Nett is located on the Niantic River, which supports species under NMFS jurisdiction. In addition, it is required that the resulting plan reflects the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources.

The INRMP recommends various management practices, in compliance with federal, state, and local standards, designed to mitigate negative impacts and to enhance the positive effects of an installation's mission on local ecosystems. The INRMP integrates all aspects of natural resources management with the rest of an installation's mission, and, therefore, is the primary tool for managing ecosystems while ensuring the successful accomplishment of the military mission at the highest possible levels of efficiency. A multiple-use, ecosystem-based management approach is implemented to allow for the presence of mission-oriented activities and the maintenance of environmental quality through the efficient management of natural resources. The INRMP Update for these sites will be developed using an interdisciplinary approach and information and studies gathered from a variety of organizations and since the 2006 INRMP was completed. An INRMP Task Force will be formed and will include CTARNG personnel and individuals from various agencies that have an interest in the management of resources at CTARNG sites.

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Regards,

Rob Dollak
Environmental Program Manager
CTARNG

STATE OF CONNECTICUT

MILITARY DEPARTMENT

STATE ARMORY, 360 BROAD STREET, HARTFORD,
CONNECTICUT 06105-3780

16 January 2020

Wendi Weber, Regional Director
U.S. Fish and Wildlife Service
Northeast Regional Office
300 Westgate Center Drive
Hadley, MA 01035-9587

Subject: **Sikes Act Coordination of the Integrated Natural Resources Management Plan (INRMP) Update for Stone's Ranch Military Reservation, Camp Nett, and East Haven Rifle Range, Connecticut**

Dear Ms. Weber:

This letter is to request your assistance in the review and coordination of the INRMP Update for three Connecticut Army National Guard (CTARNG) installations: Stone's Ranch Military Reservation, Camp Nett, and East Haven Rifle Range. Pursuant to the requirements of the Sikes Act (16 United States Code [U.S.C.] 670a et seq.), the 2006 INRMP is being updated and is currently in the draft stage of development. As you know, the Sikes Act requires the preparation of an INRMP in cooperation with the U.S. Fish and Wildlife Service (USFWS) and the Connecticut Department of Energy and Environmental Protection (CT DEEP). In addition, it is required that the resulting plan reflects the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources. The Sikes Act also requires the signature of a USFWS Regional Director or their designee on the final INRMP.

The INRMP recommends various management practices, in compliance with federal, state, and local standards, designed to mitigate negative impacts and to enhance the positive effects of an installation's mission on local ecosystems. The INRMP integrates all aspects of natural resources management with the rest of an installation's mission, and, therefore, is the primary tool for managing ecosystems while ensuring the successful accomplishment of the military mission at the highest possible levels of efficiency. A multiple-use, ecosystem-based management approach is implemented to allow for the presence of mission-oriented activities and the maintenance of environmental quality through the efficient management of natural resources. The INRMP Update for these sites will be developed using an interdisciplinary approach and information and studies gathered from a variety of organizations and since the 2006 INRMP was completed. An INRMP Task Force will be formed and will include CTARNG personnel and individuals from various agencies that have an interest in the management of resources at CTARNG sites.

The Task Force ensures that information concerning the natural resources on or in the vicinity of these installations is accurate and is presented acknowledging local and regional management strategies. We request your attendance at the first Task Force Meeting scheduled for March 2, 2020 at 10:00 AM at the Connecticut National Guard Armory, 360 Broad Street, Hartford, CT 06105. Please confirm if you or a representative of USFWS will be able to attend the meeting. Visits to the installations, which are located 45 minutes to 1 hour from the Armory, can be scheduled as needed after the meeting. Should you have any questions, please contact Mr. Kent R. Ritter at kent.r.ritter.nfg@mail.mil or 860-493-2736. We look forward working with USFWS in this process.

Regards,

Rob Dollak
Environmental Program Manager
CTARNG

STATE OF CONNECTICUT

MILITARY DEPARTMENT

STATE ARMORY, 360 BROAD STREET, HARTFORD,
CONNECTICUT 06105-3780

16 January 2020

Katie Dykes, Commissioner
Connecticut Department of Energy and Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

Subject: **Sikes Act Coordination of the Integrated Natural Resources Management Plan (INRMP) Update for Stone's Ranch Military Reservation, Camp Nett, and East Haven Rifle Range, Connecticut**

Dear Ms. Dykes:

This letter is to request your assistance in the review and coordination of the INRMP Update for three Connecticut Army National Guard (CTARNG) installations: Stone's Ranch Military Reservation, Camp Nett, and East Haven Rifle Range. Pursuant to the requirements of the Sikes Act (16 United States Code [U.S.C.] 670a et seq.), the 2006 INRMP is being updated and is currently in the draft stage of development. As you know, the Sikes Act requires the preparation of an INRMP in cooperation with the U.S. Fish and Wildlife Service (USFWS) and the Connecticut Department of Energy and Environmental Protection (CT DEEP). In addition, it is required that the resulting plan reflects the mutual agreement of the parties concerning conservation, protection, and management of fish and wildlife resources. The Sikes Act also requires the signature of a CT DEEP Commissioner or their designee on the final INRMP.

The INRMP recommends various management practices, in compliance with federal, state, and local standards, designed to mitigate negative impacts and to enhance the positive effects of an installation's mission on local ecosystems. The INRMP integrates all aspects of natural resources management with the rest of an installation's mission, and, therefore, is the primary tool for managing ecosystems while ensuring the successful accomplishment of the military mission at the highest possible levels of efficiency. A multiple-use, ecosystem-based management approach is implemented to allow for the presence of mission-oriented activities and the maintenance of environmental quality through the efficient management of natural resources. The INRMP Update for these sites will be developed using an interdisciplinary approach and information and studies gathered from a variety of organizations and since the 2006 INRMP was completed. An INRMP Task Force will be formed and will include CTARNG personnel and individuals from various agencies that have an interest in the management of resources at CTARNG sites.

The Task Force ensures that information concerning the natural resources on or in the vicinity of these installations is accurate and is presented acknowledging local and regional management strategies. We request your attendance at the first Task Force Meeting scheduled for March 2, 2020 at 10:00 AM at the Connecticut National Guard Armory, 360 Broad Street, Hartford, CT 06105. Please confirm if you or a representative of CT DEEP will be able to attend the meeting. Visits to the installations, which are located 45 minutes to 1 hour from the Armory, can be scheduled as needed after the meeting. Should you have any questions, please contact Mr. Kent R. Ritter at kent.r.ritter.nfg@mail.mil or 860-493-2736. We look forward working with CT DEEP in this process.

Regards,

Rob Dollak
Environmental Program Manager
CTARNG

APPENDIX T – ANNUAL REVIEWS

Annual Review Template

Attendees			
Name	**Agency**	**Phone**	**Email**
Invited but Did Not Attend			

INRMP Project Implementation

1) Are INRMP projects, including follow-up inventorying and monitoring work, properly identified, developed, and submitted for funding?
2) Has project funding been received, obligated, and expended?
3) What projects have been completed and do they meet expected objectives?
4) What new projects are proposed?

Federal ESA Listed Species and Critical Habitat

1) Are conservation efforts effective?
1) Does the INRMP provide conservation benefits necessary to preclude USFWS Critical Habitat designation?
2) Are Species at Risk identified and are steps being undertaken to preclude listing?

Partnerships Effectiveness

1) Has the INRMP review team (State ARNG, USFWS, ARNG I&E, and the State Wildlife Agency) been effective in ensuring the INRMP's implementation?
2) Are other partnerships needed to meet the INRMP goals?
3) Have other partnerships been effectively used to meet INRMP goals?
4) Are internal stakeholders (training, facilities, etc.) effectively coordinating projects?

Fish and Wildlife Management and Public Use

1) Are public recreational opportunities such as hunting, fishing, and wildlife viewing available to soldiers and employees?
2) Are public recreational opportunities such as hunting, fishing, and wildlife viewing available to the public?
3) Does the INRMP and site offer opportunities or facilities for disabled sportsmen?

Team Adequacy

1) Is the State ARNG's natural resources team adequately resourced to fully implement the INRMP?
2) Is the State ARNG's natural resources team adequately trained to fully implement the INRMP?

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APPENDIX U – ARNG RECORD OF ENVIRONMENTAL CONSIDERATION

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Enviro tracking #	**ARNG ENVIRONMENTAL CHECKLIST**	State ARNG

PART – A PROJECT INFORMATION

1. Project name:INRMP Update and development of a Forest Stewardship Plan

2. Project number: (MILCON if applicable) | 3. Date prepared: 10AUG20

4. Description and location of the project/proposed action.

a. Location (Include a detailed map if applicable):

Integrated Natural Resources Management Plan (INRMP) Update for Stone's Ranch Military Reservation (SRMR) and East Haven Rifle Range (EHRR) for the Connecticut Army National Guard (CTARNG) by EA Engineering, Science, and Technology, Inc., PBC (EA). In the INRMP, the goal is to minimize or avoid any adverse effects to the mission while providing protection and conservation of natural resources. The Sikes Act was developed in part to alleviate the potential for designated critical habitat occurring on Department of Defense (DoD) lands. The goal is to support these species without having a critical habitat designation on the installation.

b. Description:

INRMP Purpose and Authority: An INRMP Update provides the opportunity to capture new mission or resource changes, or new projects that need to be built into planning and review for the next five years. This INRMP Update will also include a Forest Stewardship Plan. INRMPs include specific projects that are part of broader goals and objectives for the management needs of CTARNG, the INRMP is the guidance document that can be used for management of natural resources. This INRMP will be in line with the Army National Guard (ARNG) Installations and Environment (I&E) Directorate Policy for Integrated Natural Resources Management Plans (INRMP) released in 2019. As part of this INRMP Update, a Forest Stewardship Plan will be developed that will provide for management of forests on CTARNG lands for the purposes of supporting the mission while protecting and enhancing habitat, water quality, and controlling invasive species. Invasive species and overbrowse are two larger management issues in forested habitats.

c. The proposed action will involve (check all that apply):

- ☒ Training activities/areas
- ☐ Construction
- ☒ Natural resource management
- ☐ Maintenance/repair/rehabilitation
- ☐ Real estate action
- ☒ Environmental plans/surveys
- ☐ Innovative readiness training project
- ☐ Other (Explain):

d. Project size in acres: *(if applicable)* Acres of proposed new surface disturbance: *(if applicable)*

5. Start date of proposed action (dd-mmm-yy): *NOTE: this must be a future date.*

6. Programmed fiscal year: 2020

7. End date (if applicable):

PART B – DECISION ANALYSIS GUIDE

To use a categorical exclusion, the project must satisfy the following three screening criteria: no segmentation, no exceptional circumstances and a qualifying categorical exclusion that covers the project. The following decision tree will guide the application and documentation of these three screening criteria. The criteria were extracted from 32 CFR Section 651.29 and represent the most common screening conditions experienced in the ARNG. NOTE: Each question in Part B must have an applicable block checked for concurrence with REC.

1. Is this action segmented (the scope of the action must include the consideration of connected, cumulative, and similar actions)? ☐ Yes (go to #30) ☒ No (go to #2)

2. Is there reasonable likelihood of significant environmental effects (direct, indirect, and cumulative)? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question.
☐ Yes (go to #30) ☒ No (go to #3)

3. Is there a reasonable likelihood of significant effects on public health, safety or the environment? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question.
☐ Yes (go to #30) ☒ No (go to #4)

4. Is there an imposition of uncertain or unique environmental risks? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question. ☐ Yes (go to #30) ☒ No (go to #5)

5. Is the project of greater scope or size than is normal for the category of action? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question.
☐ Yes (go to #30) ☒ No (go to #6)

6. Does the project introduce or employ unproven technology? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question. ☐ Yes (go to #30) ☐ No (go to #7)

7. Will there be reportable releases of hazardous or toxic substances as specified in 40 CFR Part 302? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question.
☐ Yes (go to #30) ☐ No (go to #8)

8. If proposed action is in a non-attainment or maintenance area, will air emissions exceed de minimus levels or otherwise require a formal Clean Air Act (CAA) conformity determination? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question.
☐ Yes (go to #30) ☐ No (go to #9) ☒ N/A (go to #9)

9. Will the project have effects on the quality of the environment that are likely to be highly controversial? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question.
☐ Yes (go to #30) ☒ No (go to #10)

10. Will the project establish a precedent (or make decisions in principle) for future or subsequent actions that are reasonably likely to have future significant effects? If action meets screening criteria but is assessed in an existing EA or EIS, check NO and proceed to the next question. ☐ Yes (go to #30) ☒ No (go to #11)

11. Has federal funding been secured for the Innovative Readiness Training (IRT) project?
☒ Not applicable (go to #13) ☐ Yes (go to #13) ☐ No (go to #12)

12. NOTE: IRT projects not currently funded can secure approved NEPA documentation. However, once funding is secured State ARNG is required to coordinate with ARNG-ILE-T to complete natural and cultural surveys via proponent funding. ☐ Confirmed (go to #27)

13. Do you have a species list from the U.S. Fish and Wildlife Service that is less than 90 days old?
☒ Yes (go to #14) ☞ Date of list: 01JULY20 ☐ No (update species list, return to #13)

14. In reviewing the species list, what determination was made by the State ARNG?
- ☐ No species present (go to #16)
- ☒ No affect (go to #16)
- ☐ May affect but not likely to adversely affect ☞ Date of USFWS concurrence: (go to #16)
- ☐ May affect likely to adversely affect (go to #15)

15. Does an existing biological opinion cover the action? ☐ Yes ☞ Date of BO: (go to #16) ☐ No (go to #30)

16. Have the Endangered Species Act, Section 7 requirements been completed?
☒ Yes ☞ Date of documentation: 01JULY20 (go to #17) ☐ No (complete documentation, return to #16)

17. Does the project involve an undertaking to a building or structure that is 50 years of age or older?
☐ Yes (go to #18) ☒ No (go to #20)

18. Has the building or structure been surveyed for the National Register of Historic Places?
☐ Yes (go to #19) ☐ No (complete inventory, return to #18)

19. Is the building or structure eligible for or listed on the National Register of Historic Places?
☐ Yes (go to #20) ☐ No (go to #20)

20. Does the action involve ground disturbing activities? ☐ Yes (go to #21) ☒ No (go to #22)

21. Has an archaeological inventory or research been completed to determine if there are any archaeological resources present? ☐ Yes (go to #22) ☐ No (complete inventory, return to #21)

22. In reviewing the undertaking, under the National Historic Preservation Act (NHPA) (for both above and below ground resources), what determination was made by the State ARNG?

☒ No 106 undertaking; no additional consultation required under NHPA (go to question #27)
☐ No properties affected ☞ Date of SHPO concurrence: (go to #24)
☐ No adverse effect ☞ Date of SHPO concurrence: (go to #24)
☐ Adverse effect (go to #23)

23. Has the State ARNG addressed the adverse effect?
☐ Yes (place date of MOA or existing PA and explanation of stipulations below, go to #24) ☐ No (go to #30)

23a. Date of MOA or PA and explanation:

24. Per DoDI 4710.02 did the state ARNG determine that tribal consultation was necessary for this project?
☐ Yes (go to #25) ☐ No (Provide reason in block below, go to #27)

24a. Reason for no consultation:

25. Did the Tribes express an interest or respond with concerns about the project?
☐ Yes (go to #26) ☐ No ☞ Date of MFR: (go to #27)

26. Has the State ARNG addressed the Tribal concerns?
☐ Yes (place date of MOU or explanation in box below, go to #27) ☐ No (address concerns, return to #26)

26a. Date of MOU or explanation of how State addressed tribal concerns:

27. Does the project involve an unresolved effect on areas having special designation or recognition such as those listed below? For any yes responses go to #30 otherwise go to #28. If any No response is a result of negotiated and/or previously resolved effects please describe resolution in box 27a below.

Type	Unresolved Effects?	Type	Unresolved Effects?
a. Prime/Unique Farmland	☐ Yes ☒ No	e. Wild/Scenic River	☐ Yes ☒ No
b. Wilderness Area/National Park	☐ Yes ☒ No	f. Coastal Zones	☐ Yes ☒ No
c. Sole-Source Aquifer	☐ Yes ☒ No	g. 100-Year Floodplains	☐ Yes ☒ No
d. Wetlands	☐ Yes ☒ No	h. National Wildlife Refuges	☐ Yes ☒ No
27a. Resolution:			

28. Is this project addressed in a separate EA or EIS review?
☐ Yes (complete information below, go to Part C, Determination) ☒ No (go to #29)
Document Title:
Lead Agency:
Date of Decision Document:

29. Does the project meet at least one of the categorical exclusions listed in 32 CFR 651 App B?
☒ Yes (complete information below, go to Part C, Determination) ☐ No (go to #30)
Primary CAT EX code: Section II b(3)
Reason why CAT EX code applies: (3) Preparation of regulations, procedures, manuals, and other guidance documents that implement, without substantive change, the applicable HQDA or other federal agency regulations, procedures, manuals, and other guidance documents that have been environmentally evaluated (subject to previous NEPA review).

30. At this time your project has not met all the qualifications for using a categorical exclusion under 32 CFR 651. Unless the scope of the project is changed, it will require an Environmental Assessment or possibly an Environmental Impact Statement. If you feel this is in error, please call your NEPA Regional Manager to discuss. If needed, go to Part C Determination.

Additional information (if needed):

PART C – DETERMINATION

On the basis of this initial evaluation the following is appropriate:

☒ In accordance with 32 CFR 651 Appendix B, the proposed action qualifies for a categorical exclusion that does not require a record of environmental consideration.
☐ A record of environmental consideration.
☐ An environmental assessment.
☐ A notice of intent to prepare an environmental impact statement.

RITTER.KENT.ROBERT.1534270816 Digitally signed by RITTER.KENT.ROBERT.1534270816 Date: 2020.08.10 13:16:19 -04'00'

Signature of Proponent (requestor)
Name: Kent R. Ritter
Date: 10AUG20

DOLLAK.ROBERT.FREDERICK.JR.1193911796 Digitally signed by DOLLAK.ROBERT.FREDERICK.JR.1193911796 Date: 2020.08.10 13:31:10 -04'00'

Signature of Environmental Program Manager
Name: Robert Dollak
Date:

Other concurrence (as needed):

Signature
Name:
Title/Division:
Date:

Signature
Name:
Title/Division:
Date:

Enviro tracking #	**ARNG RECORD OF ENVIRONMENTAL CONSIDERATION**	State ARNG

1. Project name:INRMP Update and development of a Forest Stewardship Plan

2. Project number: (MILCON if applicable) | 3. Date prepared: 10AUG20

4. Start date of proposed action (dd-mmm-yy): *NOTE: this must be a future date.*

5. Programmed fiscal year: 20

6. End date (if applicable):

7. Description and location of the project/proposed action.

a. Location (Include a detailed map if applicable):

Integrated Natural Resources Management Plan (INRMP) Update for Stone's Ranch Military Reservation (SRMR) and East Haven Rifle Range (EHRR) for the Connecticut Army National Guard (CTARNG) by EA Engineering, Science, and Technology, Inc., PBC (EA). In the INRMP, the goal is to minimize or avoid any adverse effects to the mission while providing protection and conservation of natural resources. The Sikes Act was developed in part to alleviate the potential for designated critical habitat occurring on Department of Defense (DoD) lands. The goal is to support these species without having a critical habitat designation on the installation.

b. Description:

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8. Choose one of the following:

An existing environmental assessment* adequately covers the scope of this project. Attach FNSI if EA was completed by another federal agency (non-ARNG).

Date of EA (dd-mmm-yy): Lead Agency:

An existing environmental impact statement* adequately covers the scope of this project.

Date of EIS (dd-mmm-yy): Lead Agency:

☒ After reviewing the screening criteria and completing the ARNG environmental checklist, this project qualifies for a categorical exclusion (select below).

CAT EX Code: b(3)

CAT EX Code:

CAT EX Code:

This project is exempt from NEPA requirements under the provisions of:

Cite superseding law:
**Copies of the referenced environmental assessment or environmental impact statement can be found in the ARNG Environmental Office within each state.*

9. Remarks (if needed):

RITTER.KENT.ROBERT.1534270816 Digitally signed by RITTER.KENT.ROBERT.1534270816 Date: 2020.08.10 13:17:12 -04'00'

Signature of Proponent (requestor)
Name: Kent R. Ritter
Date: 10AUG20

DOLLAK.ROBERT.FREDERICK.JR.1193911796 Digitally signed by DOLLAK.ROBERT.FREDERICK.JR.1193911796 Date: 2020.08.10 13:32:42 -04'00'

Signature of Environmental Program Manager
Name: Robert Dollak
Date:

Proponent Information

10. Proponent: Kent R. Ritter
11. Address: 360 Broad Street, State Armory
12. POC: Kent R. Ritter
13. Comm. voice: 860-493-2736
14. Proponent POC e-mail: kent.r.ritter.nfg@mail.mil

COMPONENT PLANS

COMPONENT PLAN A: FOREST MANAGEMENT PLAN

COMPONENT PLAN B: FOREST STEWARDSHIP PLAN

COMPONENT PLAN C: INTEGRATED WILDLAND FIRE MANAGEMENT PLAN

COMPONENT PLAN D: INTEGRATED PEST MANAGEMENT PLAN

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All component plans are provided on the accompanying compact disc.

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