

**Joint Base Langley-Eustis (Eustis)
Integrated Natural Resources Management Plan
Annual Review Summary for 2021**

1. General. Joint Base Langley-Eustis -Fort Eustis (JBLE-E) prepared and implemented an Integrated Natural Resources Management Plan (INRMP) in accordance with Air Force Instruction (AFI) 32-7064, Integrated Natural Resources Management and the Sikes Act with the current INRMP being approved by the 633 Air Base Wing Commander on 5 June 2019. The installation met Category I Criteria that specify this requirement. The INRMP serves as the primary tool for managing natural resources. Concurrence with this document was obtained from Virginia Department of Wildlife Resources (formerly Virginia Department of Game and Inland Fisheries) and US Fish and Wildlife Service (USFWS) on 14 June 2019 and 20 June 2019, respectively. The INRMP must be reviewed annually as required by Air Force (AF) regulations. It was reviewed for the period of approximately 6 June 2020 through 5 June 2021 with some slight variations based on particular topics discussed below. This review constitutes the second annual review since the INRMP was approved. Overall responsibility for natural resources management exists with the Natural Resources & Integrated Pest Management Branch within the Environmental Element (CEIE) of the 733 Civil Engineer Squadron (CES).

2. AFMAN 32-7003. Air Force Manual (AFMAN) 32-7003, Environmental Conservation (dated 20 April 2020) replaced AFI 32-7064 (Integrated Natural Resources Management). This policy document requires annual reviews of the INRMP.

3. Access to the JBLE-E INRMP. The JBLE-E INRMP is available to all installation community personnel. It is found on the JBLE website using the following link: <https://www.jble.af.mil/Units/Army/Eustis-Enviromental/> (scroll down to the “NATURAL RESOURCES/PEST MGMT” section).

4. Accomplishments.

A. Execution of Fiscal Year (FY) 19 natural resource projects HERT195331 (wildlife survey), HERT195336 (management of invasive species), HERT195337 (management of forest/habitat), HERT195338 (management of urban forest habitat), and HERT195339 (management of nuisance wildlife). HERT195331 (wildlife survey), HERT195336 (management of invasive species), HERT195337 (management of forest/habitat), HERT195338 (management of urban forest habitat) were executed under W912HN-19-2-0007 through the US Army Corps of Engineers Savannah District with an effective (start) date of 30 September 2019. These projects were completed in September 2020 with the exception of HERT195331 with a delayed completion date of September 2021 due to the COVID-19 pandemic. HERT195339 was contracted with US Department of Agriculture-Wildlife Services (USDA-WS).

B. Execution/partial completion of FY 20 natural resource projects HERT205336 (management of invasive species), HERT205337 (management of forest/habitat), and HERT205339 (management of nuisance wildlife). HERT205336 (management of invasive species) and HERT205337 (management of forest/habitat) were executed under W912HN-20-

2-0005 through the US Army Corps of Engineers Savannah District with an effective (start) date of 30 September 2020. These projects have a period of performance of 29 September 2021. HERT205339 was contracted with US Department of Agriculture-Wildlife Services. Prior to execution of this contract, Air Force Civil Engineer Center (AFCEC) combined HERT(FY)5337 and HERT(FY)5338 into one project HERT(FY)5337. Essentially, urban forest management tasks became included in with forest habitat management tasks. A shortfall exists for this contract as AFCEC omitted the tasks from the scope of work originally prepared for HERT205338 from the contract. Consequently, several actions did happen during the review period.

C. CEIE-Army Support Activity (ASA) Range Operations/Integrated Training Area Management coordination. These meetings have been instrumental in identifying issues and ideas for improvements towards long-term sustainment of training lands and the natural resources that exist there within the context of meeting military missions. However, meetings remain curtailed since March 2020 due to the COVID-19 pandemic. CEIE and ASA/Range Operations anticipate continuing these meetings in August.

D. Section 7 Consultations. Consultations for the airfield clear zone tree removal was completed through the USFWS' Information for Planning & Consultation (IPaC) system to address Northern long-eared bat and black rail.

E. Wetland management/permitting. The following Joint Permit Applications (JPA) and subsequent permits were obtained/executed for the following projects:

- Slingload Training Area & Landing Zone (STALZ) site improvement via selected tree clearing (Virginia Department of Environmental Quality issued Virginia Water Protection (VWP) General Permit Tracking Number WP4-20-1309 which was executed & completed).
- 3d Port Bulkhead replacement (being processed via USA Corps of Engineers).
- Joint Logistics Over the Shore (JLOTS)/Pier Stab (JPA currently being processed).
- Security Marker Buoys (JPA currently being processed).
- Dredging Regional Permit for dredge pipeline route (issued by USA Corps of Engineers).

F. Macroinvertebrate fauna inventory update. Macroinvertebrate fauna represent a highly significant group of organisms in relation to ecosystem management at Joint Base Langley-Eustis (Eustis). Natural resources staff prepared a consolidated document articulating all related data in 2018 entitled *Insects, Other Arthropods & Other Macroinvertebrates Observed on Fort Eustis* (Christensen, 2018) and included in the June 2019 INRMP. It is the objective of the CEIE staff to update this document annually. The first update (*Insects, Other Arthropods & Other Macroinvertebrates Observed on Fort Eustis: Understanding the Significance of Invertebrate Taxa on Military Missions – Update #1*) was completed in June 2020. It served as an information source for continued inventories and surveys, and surveillance plans, and is included in IPMP annual reviews and INRMP Annual Review Summaries. Data continues to be collected since the last annual review and an updated

version (Update #2) of *Insects, Other Arthropods & Other Macroinvertebrates Observed on Fort Eustis: Understanding the Significance of Invertebrate Taxa on Military Missions* will be generated at the end of Calendar Year (CY) 2021. A macroinvertebrate (and flora) survey focusing on special invertebrate fauna is scheduled to be executed this CY (HERT215331).

G. Wildlife incidents & responses. CEIE natural resources staff responded to 140 wildlife incidents during the review period. This is an increase compared to 108 incidents during the previous review period.

H. Continued nutria (*Myocastor coypus*) surveillance. Nutria are large non-native aquatic rodents that if established would cause significant damage to installation wetland habitats. Such damage would lead to erosion, propagation of invasive Common Reed and reduce the biodiversity. CEIE accomplished surveillance through a contract with USDA-WS via HERT(FY)5339. Surveillance was performed in 2015, 2017, 2019, and 2020 and during this review period (2021). Techniques include use of hair snare platforms but also the use of canine detection teams. No nutria were detected in the recent survey nor in the past surveys.

I. Major nuisance wildlife management activities.

- (1) Birds in Commissary. Several individual birds (particularly English house sparrows) gained access to and remain imprinted on the Commissary building since 2019. The CES pest shop made numerous attempts to trap/capture the birds but to no avail. CEIE natural resources staff in concert with US Department of Agriculture-Wildlife Services (USDA-WS) agents made several attempts using pellet rifles and other trapping techniques; however, the situation remains unresolved. CES/CEIE natural resources and pest management staff offered various means of excluding birds but many of these were not considered by the Commissary.
- (2) Impacts from beaver activity. Beaver activity impacted three separate locations during the Summary period: Eustis Lake, Range 3/BTRACS Range general area, and Training Area 28. CEIE natural resources staff responded to the Eustis Lake issue based on notices by BOS contract staff of debris clogging spillways. The Eustis Lake issue arose during 1st quarter of FY 21 and no funding existed for HERT215339 (nuisance wildlife management). Beavers were likely bank-denning as opposed to typical dams. CEIE staff spent an estimated 3 hours searching for dens which was necessary to attempt any sort of capture. This was unsuccessful. Funding became available in late 2d quarter and USDA-WS agents then took over the action. Eventually the effort was discontinued because den sites could not be identified and debris stopped filling the spillways. CEIE natural resources staff utilized USDA-WS agents for the other locations. Four beavers were removed from TA 28 and four from the firing range area. Some issues arose with the firing range control effort because

range personnel contacted CES directly rather than the natural resources staff, and it was determined that an unknown person(s) had attempted to break up the dam instead of requesting support from CEIE natural resources staff. This altered the beaver's behavior impacting the USDA trapping effort which wasted money and increased the time needed to resolve the situation. All wildlife issues should be addressed directly to the CEIE natural resources staff, and no one should be taking their own actions as this impacts our operation as well as possibly leading to federal or state violations.

- (3) Resolution of evening bats (*Nycticeius humeralis*) colonizing Building 1610. A population of evening bats was imprinted on/utilizing Building 1610 which is an operational, occupied warehouse structure used by contract staff for supply operations. Since at least 2010 (and through this review period), individual bats have been observed throughout the building usually on the floor, beneath pallets, or in storage bins as opposed to the typical roosting behavior. Most were dead when found though some were alive but unable to fly. Occasionally some are observed flying in the building. This situation posed health issues for personnel working in the building as well as creating high annual bat mortality. Specimens had been sent to the US Geological Survey National Wildlife Health Center in Madison, Wisconsin, for analysis though no specific causative factor could be determined. Most specimens were emaciated and many contained moderate to high ectoparasite loads. On several occasions from 2011 through 2014 the building was evaluated and potential entry points were sealed but to no avail. A new roof was installed on/about December 2019. At least 23 dead/dying bats were found between January 2019 and 29 June 2020. Natural resources staff requested funding through AFCEC/ISS since 2015 to fully characterize the situation and identify a resolution. USDA-WS was able to find a bat specialist who identified an entrance/exit point in August 2019. Shortly after this time, funding became available in FY 20 (HERT195361) and the situation was finally characterized. During the Summary period, a bat excluder device was installed that allowed bats to exist but not reenter the structure. Three monitoring surveys were performed with no bats noted as exiting the structure. No bats were reported to CEIE since the excluder was installed. This situation is considered resolved.
- (4) Eastern gray squirrels (*Sciurus carolinensis*) in privatized housing. Gray squirrels in privatized housing became an issue in February 2021. Nearly all of the squirrel related complaints, damages, and nuisance calls occurred in the Pershing Avenue/Thompson Circle area of the installation. Natural resources staff documented 7 houses with active or apparent wildlife feeding activities and over 15 houses that had unrepaired openings/preexisting damage, or were missing, louvers and vent covers. In total, squirrels were removed or deterred from 4 houses by CEIE and several educational contacts were made with BBC maintenance crews. Two additional squirrel calls turned out to be non-native bird species (European starling and house sparrow). BBC was instructed to stop all wildlife feeding, repair buildings, and modify their roofing repair times to occur before the early breeding season (before February) as to prevent

squirrels from being trapped in residences. In one incident an adult female was sealed in an attic with at least 4 young. It took 2 weeks of trapping effort to remove the mother and young. In another incident the contractor conducting roof repairs knowingly sealed an adult squirrel in an attic. It took 2 days for CEIE to remove that squirrel after the contractor tried unsuccessfully for almost a week.

- (5) Other nuisance wildlife actions during the Summary period. USDA-WS removed 3 adult coyotes from The Pines Golf Course. On several instances golf course personnel reported being followed and/or barked at by adult coyotes. CEIE investigated and were shown 4 cell phone videos where an adult coyote was trailing within 40 yards of the golf cart or mower. Two additional videos were shown where the coyote was aggressively barking, “scolding” personnel while on the greens. USDA lethally removed the adults while using a golf cart as a decoy to entice the offending coyotes into the open.

J. Review of projects for natural resource issues. Natural resources staff reviewed/evaluated 27 Air Force (AF) form 813s, AF form 332s, environmental assessment drafts, and other documents as well as participating in related conference calls and site visits during this Summary period.

K. DOD-wide Snake Fungal Disease Study. Snakes are critical nongame fauna serving as predators and prey in the installation ecosystem. In recent years, several snake species and respective populations have been impacted by the disease Ophidiomycosis (previously called Snake Fungal Disease), which is an emergent pathogen in the North America caused by the fungal pathogen *Ophidiomyces ophiodiicola*. CEIE participated in the DOD-wide Snake Fungal Disease Study conducted May-October 2018. This study was conducted again in 2021 with natural resources staff collecting 19 samples to date with the study continuing through summer 2021. This participation builds on the installation's participation in the 2018 program. A severe fungal disease is affecting snake species across the eastern US. With a high mortality, major reductions in the installation's snake populations could have direct and indirect impacts by increasing rodent and other prey species that could lead to human health risks as well as landscape ecology and military field training.

L. Whitetail Deer Management. Whitetail deer management constitutes one of the primary natural resource tasks for this installation. The objective is to attain a viable population that can meet a biological carrying capacity concurrent with an appropriate cultural carrying capacity. The actual population objective varies annually due to habitat loss from construction and alteration of land areas that affect deer movement. Essentially, the deer population must be managed in order to prevent damage to habitat by over browsing, reduce the risks of tick-borne diseases, reduce risks of vehicular collisions, maintain a viable recreational hunting program (sufficient numbers of healthy animals), and overall support a healthy ecology.

(1) Whitetail deer surveys. Semiannual deer Forward-Looking Infrared (FLIR) surveys were conducted in August and January. This survey appeared to show a slightly lower population than previous surveys. However, with a substantial gap in time and different survey and methodology between the former and currently assigned biologists the population appears to be relatively stable at this time. Virginia DWR and another local DoD installation expressed EHD concerns for 2020-2021 as they had found EHD killed deer or experienced lower than usual hunter observations. CEIE responded to 2 adult deer (November) that showed signs of active Epizootic Hemorrhagic Disease (EHD) well outside of the typical disease window. With an unusually wet 2020 year and mild 2020-2021 winter, EHD may be a concern in the coming season.

(2) 2020-2021 season harvests. Deer management is accomplished via the recreational hunting program and special management harvests. The following harvest data for this season is as follows:

- Total deer harvested/removed (recreational hunting, management hunts, vehicular collision, depredation, Bird/Wildlife Air Strike Hazard actions): 164
- Recreational hunting: 100
- Management Hunt: 33

M. 2021 Spring Wild Turkey Surveys and Harvest. CEIE natural resources staff conducted male turkey ("gobblers") surveys. Ten areas were surveyed and the staff determined that sufficient population information supported conducting a lottery hunt this past spring (based on training area availability). Seven hunters (of 41 candidates) were drawn for the initial random lottery drawing. Additional hunting opportunities became available and an additional 5 hunters were drawn for the season (occurring between 10 April and 16 May). Six mature gobblers were harvested.

N. Outreach support. Natural resources staff frequently provide outreach support to installation activities as well as external entities. The following support was provided during this Summary period.

- Guest speaker at Field Sanitation class on hazardous wildlife & arthropods per request from MEDDAC/Department of Public Health (21 April 2021).
- Supported Earth Day 2021 by conducting a woodland box turtle survey (20 April) and delivering virtual presentations on tick awareness and preventing mosquito breeding sites (19 April).
- Supported Belfour Beattie Communities (privatized housing) with an information display for Earth Day (21 April).
- Career advice support. CEIE natural resources staff offered environmental science career advice to CED coworker family member.

- Natural Resources Internships. CEIE Natural Resources & IPM Branch utilized three interns resulting in mutual benefits for these individuals and the Branch. This included one individual through the DoD Skill Bridge program. This contributed to converting fallowed areas to native habitats, and saved approximately \$21,000 in contract work slated for 2022. Concurrently, this individual completed his Skill Bridge certification and his time at JBLE-E counted towards an Intensive Research Program Credits for his Environmental Bachelor of Science degree through Oregon State University. Another individual (CES employee family member) performed breeding bird surveys, mammal surveys, reptile and amphibian surveys, native and invasive plant identification and habitat surveys, and collecting data from hunter harvested and road-killed wildlife as part of an internship with The Wildlife Society. The third intern was a current Army employee for the 159th Reserve Unit who will be analyzing over 20 years of hunting data in an effort to describe and promote hunter recruitment and hunter education at JBLE-E as a Capstone Project to fulfill requirements of a Master of Science in wildlife.
- Delivered a presentation on *Reptiles & Amphibians of the Coastal Plain* at request of natural history instructor at College of William & Mary (24 Sept).*
- Taught a 6-hour introductory insect biology course (*Things What That Bugs You: An Introduction to Insects and Other Arthropods*) for the College of William & Mary Osher Life Long Learning Institute (17 Nov, 1 Dec & 8 Dec).*
- Provided presentation on natural resources/environmental stewardship and scavenger hunt advice for the Army Community Service Virtual Spring Break Camp (6 April).
- Supported the 128th Aviation Brigade Safety Day event (27 May) by operating a display and delivering information presentations to 240 soldiers and civilians about wildlife and arthropod health & safety risks.

* These functions were performed on the staff's personal time.

O. Cooperative Agricultural Pest Survey (CAPS) program participation. Natural resources staff renewed partnering with Virginia Polytechnic & State University (VT) Insect Lab to continue participation in the CAPS program (since 2007) where VT surveys for selected potential pest insects on the installation as part of larger program and provides data to CEIE that supports the insect species inventory and forest pest management.

P. Animal carcass disposal area. CEIE natural resources staff constructed a disposal area at the B2015 compound area during CY 20. This site allowed for disposal of harvested deer carcasses by recreational hunters residing on the installation. These hunters have no place or means of disposing the unwanted portions of the carcasses. The disposal site is managed in a manner to promote growth of wildflowers to support conservation of pollinating organisms.

Q. Early successional/pollinator habitat development. Approximately 11 acres of unused land at the golf course, archery range, Building 1409, vicinity of Irwin Street, and the intersection of Mulberry Island Road and Patch Road have been planted with wildflowers and

meadow mixes to increase pollinator fauna habitat. This action benefits pollinator and various other wildlife species in need of early successional habitat, increases biodiversity, and reduces effects of invasive vegetation. Furthermore, these areas provide aesthetically pleasing locations that increases quality of life for soldiers and civilians.

R. Habitat improvements. CEIE natural resources staff thinned undesirable vegetation from 4 acres of longleaf pine reintroduction sites. This work contributes to creating pine savanna habitat to improve opportunities for bobwhite quail and other fauna that require early successional habitat.

S. Memorial Park Fishing Pond. The old manmade pond located at Memorial Park (adjacent to Magnolia Park) was converted into a fishing opportunity for installation members and is now available for fishing through iSportsman as catch-and-release (catch-and-release to help maintain a fish population and to avoid any potential health issues where pond sediment information is lacking). CEIE natural resources staff stocked the pond with coppernose bluegill, shellcracker sunfish and fathead minnows. The latter species should assist in control of mosquito larvae as an added benefit. The aerator/fountain has been repaired and some peripheral vegetation control was removed.

T. Hunting, fishing and boating program. The new JBLEI 32-102 (Hunting, Fishing and Boating Program) was completed and approved/signed 12 May 2021 by the 733 Mission Support Group Commander. It has since then been uploaded to the iSportsman application. Additionally, the availability of parking areas for hunters has been increased.

U. Hazard trees. CEIE provided Operations FL with a current hazard tree list in November 2020 to include trees posing risks at the obstacle course (in Training Area 8) as requested by ASA/Range Control.

V. Bald eagle translocation. CEIE assisted JBLE-Langley/633 MSG and VDWR with bald eagle translocation research in accordance with USFWS permitting requirements. This involves trapping and relocation of eagles fitted with radio transmitters to determine if they return to their place of capture. DWR was able to capture and tag 3 bald eagles from JBLE-E. CEIE also identified potential nests to climb and tag juveniles should the need arise. Due to an adult pair of eagles showing extreme territoriality, VDWR cannot capture their quota and need new trapping locations. This research benefits JBLE-E by providing valuable data on eagle dispersal, Bird Air Strike Hazard (BASH) management, and eagle management. Additionally, this action helps build our working relationships between VDWR, USFWS, and JBLE-L. JBLE and DWR are hopeful that this cooperative effort will continue into 2022.

W. FY 2022. CEIE natural resources staff submitted scopes of work for FY 2022 to the IST. These include HERT225336 (Invasive species management), HERT225337 (Habitat management), HERT225339 (Nuisance wildlife management), HERT225335 (Equipment/maintenance), and HERT225344 (Conservation supplies).

4. Qualified Natural Resources Management & Enforcement Personnel and Resources.

A. Workload challenges, 7 June 2020 – 31 January 2021. The Natural Resources & Integrated Pest Management Branch staff were reduced from four individuals to two staff members in 2012 following a reduction in force and elimination of natural resources contract staff. This staffing level impacted several tasks particularly deer surveys and subsequent carrying capacity accuracy, performing wild turkey population surveys, performing bobwhite quail population assessment, timeliness of wetland permitting for Felker Airfield tree removal projects, and evaluating effectiveness of invasive common reed management. Additionally, considerable time was expended with managing the hunting, fishing and boating programs that had been added to CEIE responsibilities in 2019.

B. Assigned Personnel - Natural Resources Management. JBLE-E now has sufficient qualified staffing to oversee the natural resources program essentially as of 1 February 2021 following restructuring of CEIE. The current staffing (as of February 2021) consists of:

- One GS-401-12, Biological Scientist who functions as the installation natural resources manager and entomologist/invertebrate biologist/Installation Pest Management Coordinator.
- One GS-401-12, Biological Scientist who functions as the habitat and invasive vegetation programs manager.
- One GS-486-11, Wildlife Biologist who oversees the hunting & fishing program, nuisance wildlife, deer management, and other vertebrate species programs.

5. Work Plans.

A. Complete HERT195331 (wildlife survey). This project began in February 2020 but became delayed due to the COVID-19 pandemic. Completion is scheduled for September 2021. It is a vertebrate wildlife survey of herpetofauna, birds and mammals. An important component is the survey of Training Area 30 which is essentially an isolated, unused area.

B. Continue/complete FY 2020 HERT projects. The following projects began on 30 September 2020 and are scheduled for completion by 29 September 2021.

- (1) Forest inventory. JBLE-E is required to have a forest inventory prepared every 10 years (per AFI 32-7064 originally and recently replaced by AFMAN 32-7003). The last inventory was prepared in 2007. An inventory was supposed to have been prepared in 2017; however, errors generated by AFCEC precluded this from being accomplished. CEIE pressed AFCEC to get this project reinstated which did not occur until FY 20. Field work for the installation's new forest inventory began effectively 30 September 2020 under W912HN-20-2-0005 as a task within HERT205337. The task is underway with an anticipated completion date of September 2021.

(2) Continue executing HERT FY 2020 projects through the period of performance end date (HERT205336 (invasive species management), HERT205337 (forest habitat management). CEIE natural resources staff provided scopes of work and initiated consultations with AFCEC (ISS, East Region) and Savannah District. Various telephonic and email coordination with the ISS and USACE Savannah District regarding HERT205336 (invasive species management), HERT205337 (forest habitat management), and HERT205338 (urban forest management) were conducted. If the projects are funded then a contract will likely not be let until September 2020. If this occurs the projects will begin partially in the fall. However, no definitive information regarding the statuses could be obtained at the time this Summary was prepared. Three issues exist if the projects are not executed:

- Vegetation overgrowth will disrupt the management actions occurring in selected areas leading to waste of previous work. At least one year is likely to pass before FY 21 projects are executed.
- A forest inventory is required every 10 years per Air Force policy. The last inventory was completed in 2007. Installation natural resources staff provided a scope of work for this task to occur in 2017 (as part of HERT175337); however, this did not happen due to errors between AFCEC/ISS and the USACE Omaha District. The task did not get reset until FY 20 (it was initiated in September 2020 as part of HERT205337 as contracted through the Savannah District by AFCEC). This task is expected to be completed in September 2021.
- The scope of work submitted by the installation for HERT205336 specifies an aerial herbicide treatment of the invasive grass Common Reed (*Phragmites australis*) in the Fort Eustis Disposal Material Management Area (FEDMMA). This application must occur during a short window between the end of the growing season and before the first frost (generally between September and early November). If this application does not occur the two preceding applications will be for nothing and waste over \$180K because the Common Reed will expand.

(3) HERT205339, Nuisance Wildlife Management. Continue to respond to other nuisance wildlife issues during the remainder of FY 20 funding.

(4) Evaluate Training Area (TA) 17C. Reforestation efforts have transpired in TA17C following removal of dead and mature loblolly pine. These efforts included control of invasive/undesirable vegetation, management of loblolly pine growth and planting of mixed hardwoods. Considerable overgrowth is occurring and the site needs further evaluations and modification to HERT235337 scopes of work and through FY 26.

- (5) Hazard tree update needed. CEIE natural resources staff originally maintained a working hazard tree list. The objective to correct and update the list during CY 21 following execution of the current list by Operations FL.
- (6) Pollinator habitat. CEIE natural resources staff are creating pollinator habitat in several areas including (but not limited to) unused areas at the golf course, BLDG 2015 and possibly Training Area 23. This contributes to better use of unused areas, improve vegetation communities and improve biodiversity.
- (7) Whitetail deer surveys are planned for 2021-2022. Annual surveys of white-tailed deer populations allow CEIE to determine population trends and to set harvest restrictions for the hunting seasons.
- (8) Evaluate a management plan for Common reed (*Phragmites australis*) and incorporate into scopes of work for FY 23-26.

C. Execute FY 2021 projects. The work plan for CY 21 includes execution of the following tasks:

- (1) Training on forestry for selected staff member.
- (2) Continuation/maintenance of animal carcass disposal area, pollinator habitat, hazard tree management, white tail deer surveys and management, continuation of the hunting and fishing program, responding to wildlife incidents and outreach support events.
- (3) Evaluation of data from the forest inventory.
- (4) Continue macroinvertebrate data collection to include implementing a routine forest insect survey.
- (5) Evaluate feasibility of bobwhite quail reintroduction.
- (6) Execute HERT215337 (MGT, HABITAT, FOREST), HERT215336 (MGT, INVASIVE SPECIES), and HERT215339 (NUISANCE WILDLIFE).
- (7) Execute HERT215331 Macroinvertebrate and Flora Survey. Evaluate the findings and update the INRMP.
- (8) Evaluate the findings of HERT195331 (MGT, SPECIES, WILDLIFE SURVEY) if it is completed and update the INRMP.

D. Other work.

- (1) Staff task transitions. Staff responsibilities are to be reorganized based on the Branch consisting of 3 individuals.
- (2) National Public Lands Day. CEIE is applying for a grant for the National Public Lands Day. The grant will request funding to complete a two day project aimed at improving the Fort Eustis nature trail by planting wildflowers and installing native bee houses to encourage pollinators. Signage will be placed to educate trail users of the ecological importance of pollinators. The request also seeks funding to purchase and plant native plants of historical importance along the trail, and to place signs to educate on how the plants were used by the native people on the landscape.
- (3) Fort Eustis Nature Trail improvements. Substantial repairs and upgrades are needed to the nature trail in the coming years. HERT 225337 includes many repairs and upgrades such as replacing and upgrading the trailhead signage, rules, and educational information, repairing water diverting features to reduce erosion, replacing and sealing overlooks and bridges, and marking the correct trail directions. Annual maintenance and repairs are being scoped into the HERT to maintain the nature trail in perpetuity.
- (4) Develop long-range plans/scopes of work 2023-2026.
- (5) Conversion of approximately 80 acres of mature loblolly and conversion to early successional habitat.
- (6) Hazard tree list update.
- (7) Maintain longleaf pine sites.
- (8) Obtain USFWS-approved surveyor for listed bat species staff capability.
- (9) Create internal black rail assessment capability.
- (10) Update macroinvertebrate/arthropod inventory.
- (11) Maintain/improve existing early successional/pollinator habitats.

6. Special Issues/Topics.

A. Bobwhite quail population. The bobwhite quail population is thought to be extremely low as discussed in previous Annual INRMP Review Summaries. No bobwhite quail were observed during the 2020 annual review period; however 2 were observed or heard in CY 2021. The Natural Resources Branch intends to develop a quail management plan to delineate areas where potential quail habitat exists or can be created. The plan will list the areas that will be managed and establish scheduled maintenance (thinning, burning, mowing, etc.) designed to keep the areas in the early successional stages to promote native warm season grasses, forbs and bare ground required for quail.

B. Forest habitat loss. No significant forest habitat loss occurred during this summary period; however, approximately 0.5 acres of forested wetland was converted to scrub-shrub wetlands to complete the STALZ improvement project (via VA DEQ permit). Permit fees (\$600) and compensatory mitigation fees (\$6,120) cost a total of \$6,720.00. It was converted to scrub-shrub wetlands as a result of the permitting action.

C. Additional future loss of forest habitat. 1st Fighter Wing (Felker Army Airfield) requests removal of forested areas estimated at approximately 100 acres of upland and forested wetlands in the Felker Airfield clear zone. An Environmental Assessment was completed earlier in CY 2018. This project will be conducted as a forestry action based on AFMAN32-7003.

D. Firewood sales. Previously, firewood permits were sold for \$10 per pick-up truck load where the proceeds were forwarded the forestry account. These permits were suspended indefinitely due to the red imported fire ant (*Solenopsis invicta*) quarantine. This quarantine restricts movement of regulated materials (including wood material) that may contain red imported fire ants or their eggs and requires a written agreement with Virginia Department of Agriculture and Consumer Services as well as an inspection program. Staff and resources are not available to manage this appropriately. Suspension of firewood permits remained in effect during this review period.

E. Wetland delineation data expiration. Approximately 80% of installation's wetland resources (excluded the impact area and some SDZ areas) were delineated by the USACE-Norfolk District which was completed in December 2014. This delineation data is good for 5 years and expired in December 2019. There is no ACES funding program that allows for the validation of existing wetlands or re-delineation wetlands. Consequently, any project that has the potential to encroach, enter or occur near potential wetland areas must have funding to allow the USACE-Norfolk Regulatory Branch to delineate wetlands in the vicinity of virtually any type of project. CEIE has experienced this issue already with several smaller actions as well as training activities that require digging in training areas.

7. Summary of Required INRMP Updates.

A. INRMP Update Procedures. Approved INRMP Annual Summaries are posted with the actual INRMP on the JBLE website (mentioned in paragraph 3 above). Changes to the INRMP are noted in this section. The following changes constitute updates to keep the INRMP and do not require a major revision of the INRMP. These updates to the INRMP noted here supersede existing narrative.

B. Status of the fauna inventory:

- (1) Vertebrate fauna. No new vertebrate taxa were identified on the installation during this review period. However a vertebrate survey was initiated for FY 2019 but completion was delayed due to the pandemic. The survey report will be completed by September 2021 and may yield species not previously documented on the installation.
- (2) Invertebrate fauna. CEIE staff prepared the document *Insects, Other Arthropods & Other Invertebrates Observed on Fort Eustis* in 2019 that serves as a baseline from which invertebrate organisms are documented on the installation. It was incorporated into the current INRMP as Appendix 7 to Annex C (5 June 2019). The objective is to prepare an annual update of this document. CEIE generated Update #1 of this document as of 25 June 2020 and is incorporated by reference. Data collection continued since the end of the previous review period. Update #2 will be prepared by December 2021, and the number of taxonomic groups is expected to increase.

C. Federally listed species status.

- (1) Northern long-eared and Indiana bats. Two federally-listed species were considered to be present on the installation at the beginning of the review period. These species were the threatened Northern long-eared bat (*Myotis septentrionalis*) and the endangered Indiana bat (*Myotis sodalis*). The Northern long-eared bat was first documented in 2016 by both acoustic and mist net captures. The Indiana bat was detected by acoustic techniques during this 2016 survey; no individual Indiana bats were captured. Subsequent bat surveys were conducted in 2017 and 2019. The 2017 survey was conducted solely via acoustic techniques. The Northern long-eared bat was recorded while the Indiana bat was not documented. The 2019 survey consisted of both acoustic and mist-netting techniques. The Northern long-eared bat was documented by acoustics but none were captured in nets. The Indiana bat was not recorded via acoustics nor mist-net captures. Based on this information, CEIE natural resources staff consulted with USFWS who advised that the Indiana bat need not be considered because it is currently not in the USFWS Information for Planning and Consultation (IPaC) system for the JBLE-E geographical area. Natural resources staff recommended the chain of command replace the 15 April - 15 September tree cutting time of year restriction (TOYR) with a 1 June - 31 July TOYR for the federally listed Northern long-eared bat. However, USFWS did advise that the

Indiana bat distribution in Virginia is being revised and it is conceivable that the Indiana bat may be placed in the IPaC system for our geographical area at a later date. Reference to the Indiana bat is automatically removed from the INRMP. This pertains to Sections 5.3.3, 5.4.2, 7.12.8.2, 7.12.8.4, and Appendix 3 to Annex C.

- (2) Black rail. The Eastern black rail (*Laterallus jamaicensis*) is a small marsh bird that was designated as threatened under the Endangered Species Act by the USFWS in October 2020. This species was added to the USFWS' IPaC system only recently to include the immediate local geographical area. JBLE-E executed several wildlife/bird surveys in 2001, 2006, and 2015 as well as a current vertebrate species survey (to be completed by September 2021) none of which documented the species on the installation. Current data suggests that they are not present in any number here. A project request for a black rail survey will be submitted for FY 23. Nonetheless, this species shall remain as a possibly occurring and shall be considered during the Environmental Impact Analysis Process.
- (3) Monarch butterfly (*Danaus plexippus*). In December 2020, the US Fish & Wildlife Service determined that listing the monarch under the Endangered Species Act is warranted but precluded at this time by higher priority listing actions. With this finding, the monarch butterfly remains a candidate for listing.

D. Natural Resource Project Numbers. The JBLE-E INRMP identifies valid projects required to meet an appropriate levels of natural resources management. These projects are currently identified by HERT project numbers for which specific funding is required. These project numbers were annotated in the INRMP originally based on the ACES program (see Section 9.1). However, AFCEC no longer uses the old ACES numbers in its official programming but rather now use RAM numbers. Both numbers are tracked; however, the avoid confusion the following table represents a change to the INRMP:

Project Title	ACES Number	RAM Number
MGT, HABITAT, FOREST	HERT215337	MUHJA53216119
MGT, INVASIVE SPECIES	HERT215336	MUHJA53216121
MGT, NUISANCE WILDLIFE	HERT215339	MUHJA53216122
SUPPLIES, CN	HERT215344	MUHJA5321815
EQUIPMENT PURCHASE / MAINTAIN, CN	HERT215335	MUHJA5321817
SPECIES SURVEY UPDATE*	HERT215331	HERTA5321711
MGT, HABITAT, URBAN FOREST**	HERT215338	MUHJA53216119

* No projects involving surveys are programmed after 2021 at the time of this review summary.

** AFCEC eliminated this project and incorporated it into HERT(FY) 337/MUHJA5321619.

E. Section 7.17, paragraph 6 is revised to read as follows: “All hunting, fishing and boating activities conform to this INRMP and the current edition of JBLEI32-102 (Hunting, Fishing and Boating Program).”.

F. Section 7.17.1 is revised to read as follows: “Hunting, Fishing and Boating. Recreational hunting program management and oversight is the responsibility of CEIE. Approximately 3,184 acres are available for recreational hunting when training activities (and other mission activities) are not conducted. Currently, fishing sites are available along Harrison Road, Eustis Lake (catch and release only), Browns Lake (catch and release only), footbridge located at Third Port, and pond at Memorial Park. All hunting and fishing activities shall comply with this INRMP and JBLEI32-102. All hunting and fishing activities shall be conducted using the iSportsman application.

G. Section 7.17.1.1.3 is deleted. FSS is no longer responsible for these tasks.

H. Section 7.17.1.7 Trapping. This entire section including the 16 bullets is deleted. Recreational trapping has been discontinued and is no longer authorized at JBLE-E.

I. Section 7.12.4.1 is deleted. Recreational trapping has been discontinued and is no longer authorized at JBLE-E.

J. Section 7.17.1.2 Fees. This section is revised to read as follows: “Fees. Hunting and fishing permits are purchased through the iSportman webpage (<https://jble.isportsman.net/>). Permits are purchased for the desired type of hunting and all associated fees can be found in JBLEI32-102 (Hunting, Fishing and Boating Program), section 1.13. Funds are transferred annually to the Installation Management Flight, Civil Engineering Squadron to deposit into the 57R5095 accounting classification. The funds are then dispersed back to the installation in the 57X5095 appropriation.”

K. Section 7.17.1.3 Required permits and licenses. This section is revised to read as follows: “Required permits and licenses. Hunting on JBLE-E requires a valid Virginia State Hunting License to hunt any game on installation and additional licenses are required for all species except for small game. A Virginia big game license is required for deer and turkey. A Federal Migratory Bird stamp and a Virginia Migratory Waterfowl Conservation stamp are required to hunt migratory waterfowl. All hunters are required to have completed a state approved Hunter Education Course. Hunters must have all applicable stamps, permits, licenses and certificates in their immediate possession while hunting at JBLE-E.”

L. Section 7.17.2 Fishing. This section is revised to read as follows: “Fishing & Boating. CEIE is responsible for management and oversight of the fishing program. Approximately 50 acres of freshwater is available for recreational fishing which includes Eustis Lake, Browns Lake, and the Memorial Park pond. Eustis and Browns Lakes are catch and release only as per USEPA health advisory mandate. Fishing at Browns Lake is restricted to the overlook platform (no fishing from banks due to erosion and other issues). The Memorial Park pond is youth fishing only. Saltwater fishing is available from designated areas along Harrison Road, the footbridge and Third Port, and the Warwick Pier. All persons desiring to fish at JBLE-E shall do so using the iSportsman application (<https://jble.isportsman.net/>). The fishing locations noted here are the only authorized fishing area on JBLE-E.”

M. Section 7.17.2.2 Fees. This section is revised to read as follows: “Fees. JBLE-E fishing permits are required when fishing at Eustis Lake, Browns Lake, the Memorial Park pond, and approved installation shoreline areas as identified on the iSportsman webpage (<https://jble.isportsman.net/>). Fishing permits are purchased through the iSportman webpage. Fishing from watercraft in the James River or the Warwick River does not require a JBLE-E fishing permit. Any fisherman using any boat, kayak, etc. must obtain a boating permit on the iSportsman webpage. All persons fishing at JBLE-E require a Virginia Fishing License (unless exempted by Virginia Department of Wildlife Resources or Virginia Marine Resources Commission, as applicable, regulations) and a JBLE-E fishing permit obtained through the iSportsman application.”

N. Section 7.19 Conservation Law Enforcement. This section is a required component of the INRMP; however, trained conservation law enforcement officers no longer exist. This section remains inactive until the issue identified Section 6.F. of this Summary is resolved.

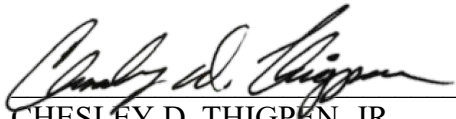
O. References to Virginia Department of Game and Inland Fisheries and its acronym VDGIF or DGIF. Virginia Department of Game and Inland Fisheries was changed to Virginia Department of Wildlife Resources and the proper acronym is VDWR. All references to Virginia Department of Game and Inland Fisheries and its acronyms in this INRMP are automatically changed to Virginia Department of Wildlife Resources and the acronym is VDWR.

P. Annex M JBLEI32-102 Hunting, Fishing and Trapping Program dated 8 July 2018. JBLEI32-102 Hunting, Fishing and Trapping Program (dated 8 July 2018) has been replaced by JBLEI32-102 Hunting, Fishing and Boating Program dated 12 May 2021.

Q. Section 7.19 Natural Resources Law Enforcement. On/about 4 July 2021, 733 Security Forces Squadron suggested restructuring of personnel by moving the game warden to the patrol section. CES and 733 SFS staff met to discuss this situation and with follow-up consultation with Staff Judge Advocate and AFCEC. AFCEC and SJA considers the JBLE-E INRMP to be in compliance with the Sikes Act, and AFCEC is

assisting CEIE/SFS towards sending candidates to the Land Management Police Training course (LMPT) at the Federal Law Enforcement Training Center in the March 2022 time frame. Additionally, SFS intended to send 2 candidates to a one-day training class with the Virginia Department of Wildlife Resources in October 2021. The existing narrative of Section 7.19 to read “Natural resources law enforcement at JBLE-Eustis is a function of the 733d Security Forces Squadron, and they will conduct conservation law enforcement to the greatest extent practical.”

2021 JBLE-Fort Eustis INRMP Annual Review Summary Approval:



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Date: 10 October 2021