

Cooperative Ecosystem Studies Units
Scope of Work
2022 Species Surveys at Naval Installations in Maine

References: Sikes Act (P.L. 86-797 § 103, as amended and extended); 16 USC 670c-1.

Background:

Since 2018, the NAVFAC PWD-ME Natural Resource Program (NRP) has been using Cooperative Agreements executed through the Cooperative Ecosystem Studies Unit (CESU) to conduct a variety of Integrated Natural Resource Management Plan (INRMP) projects that address natural resource management goals and objectives at three Naval Installations in Maine. These installations include: the Survival, Evasion, Resistance, and Escape School (SERE) located in Redington, Maine, Naval Support Activity, Cutler (NSA Cutler) located in Cutler, Maine, and Great Pond Outdoor Adventure Center (GPOAC) located in Great Pond, Maine.

Previous NRP CESU projects include; Bald Eagle Telemetry and Hazard Assessments (2018-2020), Bat Mist Net and Acoustic Surveys (2019), Bird Migration Surveys via Avian Radar (2018), Pollinator Surveys (2019), Shorebird Surveys (2019-2021), High Elevation Bird Surveys (2018, 2020), Bat Conservation Management Plan (2019), Forest Health Monitoring (2021), Canada Lynx Surveys (2018, 2020, Bicknell's Thrush Surveys (2018-2019), Atlantic Salmon Surveys (2019-2021), Nuisance Wildlife Management (2020), and Breeding Bird Surveys (2018). This Scope of Work (SOW) describes current and programmed INRMP projects at the three identified Navy installations. The base and option year services requested in this SOW build off previous NRP and CESU efforts, as well as, Sikes Act partner agreements.

Projects identified in this SOW consist of sampling for flora and fauna (priority on State and federally listed and at-risk species), habitat monitoring and management (i.e. forest health, waterway protection, invasive species, listed species recovery), and wildlife management (i.e. game species and nuisance wildlife species). Physical surveys will provide quality assurance checks for previously collected data and document new species occurrences. Habitat management activities will allow the installations to respond quickly to pest, disease, invasive species, and climate change threats. Projects related to wildlife management will inform and assist with human/wildlife conflict, protect sensitive habitats, and evaluate potential for management and recreational opportunities. All data collected will be consistent with the installations INRMP goals and objectives and will be used to inform annual data calls and INRMP updates. The SOW for each project is detailed below.

Project Location:

The Center for Security Forces Detachment Kittery Survival, Evasion, Resistance, and Escape Facility (SERE School) is located approximately 110 miles north of Portland, ME and 70 miles northwest of Augusta, Maine. The entire Installation is located within Redington Township, approximately seven miles east of the Town of Rangeley. The SERE School encompasses two parcels totally 12,466 acres that are separated by the Appalachian Trail (AT) corridor, which traverses the southeastern corner of the property. The main parcel is north of the AT corridor and is 11,320 acres. The southern parcel is 1,146 acres.

Naval Support Activity (NSA) Cutler occupies 3,003 acres in the town of Cutler, ME and 3.65 acres in the Town of Machiasport, ME. These towns are in the easternmost region of ME, in Washington County, approximately 30 miles southwest of the Canadian border.

Great Pond Outdoor Adventure Center (GPOAC) is located in Hancock County, in central ME, approximately 35 miles northeast of Bangor, ME and approximately 30 miles north of Ellsworth, ME. GPOAC encompasses four parcels of land, totaling approximately 397 acres, and is located adjacent to

three waterbodies (Great Pond, King Pond, and Alligator Lake) in Hancock County, ME. Two parcels, which total approximately 332 acres, are situated along the eastern and western shoreline of the 647-acre Great Pond. The third parcel is a narrow strip of land that encircles 147 acre King Pond and is approximately 59 acres. The fourth parcel is rectangular in shape, covers approximately six acres, and is located adjacent to the northwestern shoreline of the 1,067 acre Alligator Lake.

Purpose:

Naval Facilities Engineering Systems Command (NAVFAC SYSCOM) plans to continue and/or expand upon the previous surveys completed at the listed Installations. These efforts are further defined in the Request for Statements of Interest.

Military Mission Benefits:

The SERE School's primary mission is to provide training in a remote natural environment that is conducive to teaching military personnel survival, evasion, rescue, and resistance skills. The SERE School provides year-round training, emphasizing the basic skills necessary for long-term survival; evasion of capture by hostile forces; resistance to interrogation, indoctrination, and exploitations; and escape when captured and held by the enemy.

NSA Cutler's primary mission is to provide secure and reliable strategic and tactical command and control telecommunications services to U.S. and Coalition ships and submarines in the North Atlantic, Arctic Ocean, and the Mediterranean Sea.

GPOAC is a recreational facility with a role of providing morale, welfare, and recreation (MWR) opportunities for DoD personnel and their families. The facility does not provide military training or operations. The MWR opportunities are highly dependent upon the careful management of the natural resources at the site.

Period of Performance:

The period of performance covered by this Agreement is for 18 months beginning the date this Agreement is awarded. The Government may award up to four additional option years by modification to the Agreement unless terminated by written notification from either Party. The total duration of the Agreement, including award of any option years, shall not exceed 5-years.

- Base Award: 2022-2023 (Funding FY 2022)
- Option Year 1: 2023-2024 (Funding FY 2023)
- Option Year 2: 2024-2025 (Funding FY 2024)
- Option Year 3: 2025-2026 (Funding FY 2025)
- Option Year 4: 2026-2027 (Funding FY 2026)

The Government may, at its sole discretion, exercise the option years to renew the services set forth in this Agreement. Any requirement for the payment or obligation of funds, under the terms of this Agreement, shall be subject to the availability of appropriated funds, and no provision herein shall be interpreted to require obligation or payment of funds in violation of the Anti-Deficiency Act, 31 USC §1341 et seq. Nothing in this Agreement shall be construed as implying that Congress will, at a later time, appropriate funds sufficient to meet deficiencies.

Cooperator Deliverables/Responsibilities:

The Cooperator will conduct natural resources surveys as described in the tasks below for each Installation.

TASK 1: SERE School INRMP Projects

Task 1.1 Canada Lynx Surveys

The goal of this task is to monitor use of the installation property by the Canada lynx. Canada lynx survey efforts are completed at scheduled intervals determined in the INRMP. Previous surveys were conducted in the 2013/2014, 2015/2016, and 2019/2020 survey seasons. Survey work is required to determine if, when, and at what capacity this species utilizes the installation property. Regulations and Navy policy require current information on species presence/absence as part of the INRMP.

The survey shall adequately cover habitat available at the installation. Previous surveys have focused efforts along Redington Road with very little success. Lynx tracks were identified during off-survey efforts in the 2019/2020 season. All observations indicate that the tracks were from a transient individual, as additional tracks were never observed. Lynx populations appear to be on an upward trend and territory expansion is expected. Geographical position and suitable habitat place SERE at the forefront of territory expansion. Consistent monitoring through approved protocol will allow the NRP to monitor for species use and assist with Endangered Species Act management responsibilities and compliance requirements.

Survey shall be conducted in accordance with Maine Department of Inland Fisheries and Wildlife (MDIF&W) and the U.S. Fish and Wildlife Service (USFWS) latest survey protocols for Canada lynx and meet the following:

1. A minimum of three tracking survey events shall occur during the appropriate survey season.
2. Surveys shall be conducted 24 to 72 hours following a snow event to allow sufficient time for animal movement and limit deterioration of track quality. If travel to the project site will take longer than one business day, the contractor shall address how they will monitor for snow events that create suitable tracking conditions and their travel response plan for meeting the previously mentioned survey window.
3. All survey routes shall be surveyed by a minimum of two trained observers on foot or a suitable, approved tracked vehicle. Due to the remote nature of the installation, size of the project area, snow covered terrain, and physical/biological survey protocol, the Cooperator shall purchase a tracked vehicle(s) to be dedicated to this and future lynx survey efforts. The tracked vehicle(s) must be capable of transporting two trained observers and all the necessary field gear. The tracked vehicle shall come with a trailer capable of transporting the vehicle and all appropriate PPE (i.e. helmet/hearing protection) for two trained observers. The tracked vehicle(s) shall be delivered to the installation prior to the start of field efforts and shall become property of the Navy following completion of this task..
4. At each lynx track intercept the location shall be marked by GPS and the following data shall be recorded; track measurements (length, width, stride, straddle, and sinking depth), direction of travel, number of lynx, a track quality index (U.S. Forest Service Technical Report PSW-GTR-157), behavioral data, habitat data, and photographs.
5. A minimum of five camera traps shall be set up at several high visibility, readily accessible sites (e.g., roadways), for the duration of the tracking surveys. The Cooperator shall propose locations to deploy the camera traps that will not conflict with the use of SERE property by mission tenants. The cooperators will supply all materials necessary to establish a minimum of five camera traps including motion triggered cameras and power supplies. All cameras and power supplies shall be either designed to withstand the elements or placed in a protective enclosure capable of withstanding the elements present at the installation. All camera traps shall be secured at their location and labeled in a manner that identifies their purpose and the NRM's contact information to deter removal by Navy personnel unaware of the survey effort. All cameras and media storage devices are to remain in Navy possession for the duration of the project for physical security

purposes and shall become property of the Navy upon completion of the survey to assist with future survey efforts.

6. Unless dictated otherwise by MDIF&W or USFWS protocols, each camera trap station will include a compact disc hung in a strategic position as a long range visual attractant, and a commercial skunk lure and a short range visual attractant (e.g., feathers) that will be placed underneath a platform on a wooden stake. Cameras will be positioned on a tree facing north, 1-2 m above the snow surface and pointed at a slight downward angle towards the wooden stake positioned 3-5 m from the camera. A GPS will be used to mark the location of each camera trap station and the local site will be marked discretely for future trap checks. Each trapline will be set for a minimum of 45-60 days and checked once every 2 weeks to download data, refresh attractants, and to ensure cameras are working properly.

Reporting

The Cooperator shall be required to produce the following reports:

1. Monthly progress reports for all months associated with active field work
2. Survey plan that identifies means and methods and follows existing survey protocols for Canada lynx surveys. The plan shall identify the season, proposed routes, professionals performing the survey, and all requirements described above. A draft plan will be reviewed by the Installation NRM, who may provide to MDIF&W and USFWS for approval. Approval on the plan must be received prior to implementation of field work.
3. Draft and final technical reports. These reports will include a table of contents, purpose/objectives, study plot description, describe methods, provide the results and any analysis, make recommendations for follow-on work, and list literature cited and provide any references. Field data sheets shall be included as an appendix and a CD/DVD of the report with all photographs taken during surveys (tracks, scat, track routes equipment, etc.) shall be included. GPS location data will be depicted on maps/figures and the Geographic Information System (GIS) shapefile data provided to installation and region staff in accordance with the Region's GIS specifications, which will be provided upon award.

Task 1.2: Pollinator Survey

The INRMP at this installation addresses pollinator species presence and management generally. Plans are lacking in specific management goals and presence data for pollinator and other invertebrate species of special concern. Sensitive and/or protected pollinator species including the rusty patched bumble bee (*Bombus affinis*, Federal endangered species listed in 2017) or the yellow banded bumble bee (*Bombus terricola*) and monarch butterfly (*Danaus plexippus*). The monarch butterfly is currently a Candidate species under the ESA.

The objective of the pollinator surveys is to collect data pertaining the presence of pollinator species at the installation. Priority pollinator species include the three species listed above; however, the cooperator shall conduct baseline investigations for all potential pollinator species. Non-lethal surveys are required for all priority species. Voucher specimens allowed for all other species, as applicable and allowable under State and federal law at the time of survey work. All survey work shall be executed during the appropriate period for each priority species. The cooperator is responsible for determining appropriate survey periods for all other baseline survey efforts. The cooperator shall also review the installation for existing available habitat and identify any areas that have potential to provide habitat for priority species with minimal manipulation and/or management.

The cooperator will conduct a desktop analysis of available information pertaining to pollinator and butterfly species with potential to occur at the installation. The Navy will provide the INRMP and all relevant survey information collected to date. The investigator is responsible for checking USFWS and State of Maine available resources for current information pertaining to protected species and species of

special concern that have the potential to occur at SERE. The investigator will prepare a survey plan consisting of the means and methods proposed to document pollinator and butterfly use/habitat at the installation. The investigator will provide the survey plan to the installation NRM prior to conducting fieldwork. The NRM will provide the survey plan to and hold conference with SIKES Act agency partners (USFWS & MDIF&W) prior to survey plan approval.

The investigator shall map, using current aerial imagery, significant pollinator and butterfly habitat available at the installation. Locations of all priority species and other notable habitat features (i.e. milkweed patch, etc...) identified during survey efforts shall be GPS located. See reporting below for additional information.

Reporting and GIS Deliverables

The Cooperator shall be required to produce the following reports:

1. Monthly progress reports for all months associated with active field work
2. Survey plan that identifies means and methods and follows existing survey protocols for the requested services. The plan shall identify the season, proposed routes, professionals performing the survey, and all requirements described above.
3. Draft and final technical reports. These reports will include a table of contents, purpose/objectives, study plot description, describe methods, provide the results and any analysis, make recommendations for follow-on work, and list literature cited and provide any references. Field data sheets shall be included as an appendix and a CD/DVD of the report with all photographs taken during surveys (habitat, species, field work, etc.) shall be included. GPS location data will be depicted on maps/figures and the Geographic Information System (GIS) shapefile data provided to installation and region staff in accordance with the Region's GIS specifications, which will be provided upon award.

TASK 2: NSA Cutler INRMP Projects

Land Management

Land management projects at NSA Cutler consist of implementing the forest and invasive species management plans at NSA Cutler. The last forest inventory and management plan at NSA Cutler was completed in 2015, including a summary of all forest types that occur on the property. The invasive species management plan developed in 2014 identifies invasive species issues at the installation. In general, NSA Cutler contains approximately 494ac (200 ha) of forested lands, including mixed hardwood and softwood forests. Mixed hardwood makes up 70% of the forested lands at the installation. The remaining 30 percent consist of softwood. No significant forest pest or disease issues at the installation have been identified to date, indicating a healthy overall forest condition. Since no active forestry occurs at the installation, wildlife habitat is an important component of the forest management plan due to the presence of Federal and State listed bird and mammal species. A healthy and properly managed forest can reduce impacts due to climate change, run-off, overland sheet flow, and thermal pollution to habitat potentially occupied by Federal and State listed birds and mammal species.

There are roughly 15 acres of invasive species scattered around the installation in isolated small patches. They consist of Japanese knotweed (*Reynoutria japonica*), Himalayan Balsam (*Impatiens glandulifera*), and common reed (*Phragmites australis*). Patches of invasive species occur along road and field edges where foreign soils have been used in the past and are easily accessible. Invasive species control actions have been conducted since 2015 through mechanical removal and herbicide applications.

The Cooperator shall implement the following Land Management tasks at NSA Cutler:

Task 2.1.: Forest Health Monitoring:

Based on the composition of the Installations forests, several insects and/or diseases have the potential to occur and affect existing forest resources. Evidence of insect pests or disease has been absent on the installation since monitoring began with the development of the installation INRMP in 2011. Frequent monitoring and management through approved protocol will allow the NRP to monitor and catch issues early on assisting with INRMP management responsibilities and compliance requirements. Potential forest insects pests include spruce budworm (*Choristoneura fumiferana*), forest tent caterpillar (*Malacosoma disstria*), eastern tent caterpillar (*Malacosoma americanum*), balsam woolly adelgid (*Adelges piceae*), spruce beetle (*Dendroctonus rufipennis*), and larch sawfly (*Pristiphora erichsonnii*). Potential forest diseases include root rot, which can be caused by a variety of fungi; European larch canker (*Lachnellula willkommii*) or beech bark disease (*Nectria coccinea* or *N. galligena*). This task is to provide forest health monitoring services for the aforementioned insect and/or diseases at NSA Cutler to provide advanced detection early on and to determine practices and or treatment that may be necessary to prevent widespread damage from occurring (i.e. thinning, insecticides, etc...).

The cooperator shall conduct sampling and surveillance for each insect and disease identified as having potential to impact forest health at NSA Cutler. Surveys shall include the 494 acres of forested areas located at the main Installation parcel (VLF Field) and the out parcel (HF Field). The cooperator shall prepare survey plan that outlines the means and methods of accomplishing the requested survey work. All survey work shall occur at the appropriate times for each of the targeted forest health issues. The government can provide the maps, plans, and past reports for referencing upon the cooperators request.

A report shall be prepared documenting survey efforts and results and shall include prescriptive mitigation methods for dealing with any identified issue. It shall also cover recommendations for improving stand health and insect and disease prevention. For any identified issues or management recommendations, the contractor shall prepare a general scope of work and cost estimate for what it would take to remediate an issue or implement any recommended forest health actions. If insect or disease pests are observed while conducting survey work, the contractor shall notify the installation natural resource manager within 24hrs of the discovery.

Task 2.2: Invasive Species Management:

There are roughly 15 acres of invasive species scattered around the installation in isolated small patches. They consist of Japanese Knotweed, Himalayan Balsam, and Phragmites. As part of this task, the Cooperator will conduct a minimum of two treatments/control events in the same growing season. The Cooperator, installation NRM, NAVFAC Applied Biology, and the NAVFAC Regional Forester will coordinate when the spray events will occur and the material/equipment used. These isolated areas of invasive plants will be treated with approved herbicides and all label restrictions will be followed. Herbicides will not be allowed to be used off label. The herbicide's label must list the named invasive plant as a targeted species. All proposed herbicides will be reviewed and approved by the Installations Pest Management Coordinator prior to use. All control activities shall be conducted in accordance with the Installations Pest Management Plan, as well as, the most current Navy and DoD instructions. All herbicide usage shall be recorded and reported to the IPMC in a format suitable for entering into the Navy Online Pesticide Reporting System (NOPRS). The IPMC will provide all relevant requirements and information prior to the kick-off of this task. All herbicide application must be completed by a certified individual.

Report and GIS Deliverables

All data collected during the field surveys will be compiled and presented in draft and final summary reports. The draft and final reports will include maps, control area locations and descriptions, as well as,

future management recommendations. All spatial data and relevant mapping information shall be provided in a Geographical Information System (GIS) format and displayed on report maps. Coordination with any Federal Agency shall be completed through the installation Natural Resource Manager (NRM) unless designated otherwise.

The Cooperator shall be required to produce the following reports:

1. Monthly progress reports for all months associated with active field work
2. Survey/work plan that identifies means and methods and follows existing survey protocols for the requested services. The plan shall identify the season, proposed routes, professionals performing the survey, and all requirements described above.
3. Draft and final technical reports. These reports will include a table of contents, purpose/objectives, study plot description, describe methods, provide the results and any analysis, make recommendations for follow-on work, and list literature cited and provide any references. Field data sheets shall be included as an appendix and a CD/DVD of the report with all photographs taken during surveys (habitat, species, field work, etc.) shall be included. GPS location data will be depicted on maps/figures and the Geographic Information System (GIS) shapefile data provided to installation and region staff in accordance with the Region's GIS specifications, which will be provided upon award.

TASK 3: GPOAC INRMP Projects

Task 3.1 Pollinator Surveys:

The INRMP at this installation addresses pollinators species presence and management; generally, but the plans are lacking in specific management goals and presence data for pollinator and other invertebrate species of special concern. Sensitive and/or protected pollinator species including the rusty patched bumble bee (*Bombus affinis*, Federal endangered species listed in 2017) or the yellow banded bumble bee (*Bombus terricola*) and monarch butterfly (*Danaus plexippus*). The monarch butterfly is currently a Candidate species under the ESA.

The objective of the pollinator surveys is to collect data pertaining the presence of pollinator species at the installation. Priority pollinator species include the three species listed above; however, the cooperator shall conduct baseline investigations for all potential pollinator species. Non-lethal surveys are required for all priority species. Voucher specimens allowed for all other species, as applicable and allowable under State and federal law at the time of survey work. All survey work shall be executed during the appropriate period for each priority species. The cooperator is responsible for determining appropriate survey periods for all other baseline survey efforts. The cooperator shall also review the installation for existing available habitat and identify any areas that have potential to provide habitat for priority species with minimal manipulation and/or management.

The cooperator will conduct a desktop analysis of available information pertaining to pollinator and butterfly species with potential to occur at the installation. The Navy will provide the INRMP and all relevant survey information collected to date. The investigator is responsible for checking USFWS and State of Maine available resources for current information pertaining to protected species and species of special concern that have the potential to occur at GPOAC. The investigator will prepare a survey plan consisting of the means and methods proposed to document pollinator and butterfly use/habitat at the installation. The investigator will provide the survey plan to the installation NRM prior to conducting fieldwork. The NRM will provide the survey plan to and hold conference with SIKES Act agency partners (USFWS & MDIFW) prior to survey plan approval.

The investigator shall map, using current aerial imagery, significant pollinator and butterfly habitat available at the installation. Locations of all priority species and other notable habitat features (i.e.

milkweed patch, etc...) identified during survey efforts shall be GPS located. See reporting below for additional information.

Reporting and GIS Deliverables

The Cooperator shall be required to produce the following reports:

1. Monthly progress reports for all months associated with active field work
2. Survey plan that identifies means and methods and follows existing survey protocols for the requested services. The plan shall identify the season, proposed routes, professionals performing the survey, and all requirements described above.
3. Draft and final technical reports. These reports will include a table of contents, purpose/objectives, study plot description, describe methods, provide the results and any analysis, make recommendations for follow-on work, and list literature cited and provide any references. Field data sheets shall be included as an appendix and a CD/DVD of the report with all photographs taken during surveys (habitat, species, field work, etc.) shall be included. GPS location data will be depicted on maps/figures and the Geographic Information System (GIS) shapefile data provided to installation and region staff in accordance with the Region's GIS specifications, which will be provided upon award.

OPTIONAL TASKS

Optional tasks described below have specific years that the various tasks are anticipated to be funded. However, tasks may be funded earlier or later, or not at all, depending upon funding availability.

Option Year 1 (Planned for FY23)

Task 1. GPOAC Land Management (invasive species, erosion control, nuisance wildlife): The purpose of this task is to implement land management INRMP goals and objectives at GPOAC. For Option Year 1, land management tasks (tasks 1.1 to 1.3) include invasive species management, erosion control monitoring and mitigation, and nuisance wildlife management. GPOAC encompasses three properties, adjacent to three separate waterbodies and several streams. These areas receive high recreational use from DoD personnel from all across the nation. Visitors are potential vectors for invasive species and the high recreational use of the area can lead to shoreline erosion and habitat degradation. Certain species of wildlife such as beaver and muskrat consistently affect facility access roads and can accelerate erosion issues.

Task 1.1 Invasive Species Control: Invasive species identified in the GPOAC Invasive Terrestrial Species Inventory and Management Plan (2015) include purple loosestrife and common reed. As part of this task, the Cooperator will conduct a minimum of two treatments/control events in the same growing season. The Cooperator, installation NRM and Integrated Pest Management Coordinator (IPMC), NAVFAC Applied Biology, and the NAVFAC Regional Forester will coordinate when the spray events will occur and the material/equipment used.

The Cooperator shall work with the NRM in identifying target invasive species, locations, management strategy options, priority management efforts and develop a Work Plan that identifies these discussions and prior control efforts. For the purpose of this option year, priority target species include purple loosestrife, common reed, and poison ivy. Priority species will be determined based on the state of invasive species presence at the time of task execution. Total acreage of all three species is less than one-acre. Poison ivy control is the primary target along roadsides, campsites, cabins, recreational facilities, and hiking trails. Purple loosestrife and common reed are restricted to a few small pockets adjacent to the recreational facility and have been managed in the past through hand-pulling.

Invasive species will be mechanically removed or treated with approved herbicides. All label restrictions will be followed when using herbicides. Off-use of herbicide label is not permitted. The herbicide's label must list the named invasive plant as a targeted species. All proposed herbicides will be reviewed and approved by the Installations IPMC prior to use. All control activities shall be conducted in accordance with the Installations Pest Management Plan, as well as, the most current Navy and DoD instructions. All herbicide usage shall be recorded and reported to the IPMC in a format suitable for entering into the Navy Online Pesticide Reporting System (NOPRS). All herbicide application must be completed by a certified individual. All herbicides shall be pre-mixed prior to coming on-board Navy property. No mixing of herbicides is allowed on DoD lands without the proper facilities. During all activities that require herbicide use, the Cooperator shall have appropriate spill containment and clean-up supplies, as well as, the appropriate PPE for the task. The IPMC will provide all relevant requirements and information prior to the kick-off of this task.

The Cooperator shall implement control methods once approval of the work plan is received. The Cooperator shall provide a minimum of one preliminary field investigation, two herbicide treatments (late spring & early fall), and one follow-up monitoring event under this task. Control efforts shall occur throughout the appropriate season(s) and follow-up monitoring and reporting shall be completed. The Cooperator shall delineate proposed treatment areas during the preliminary field investigations prior to control efforts and again at the end of the project during the follow-up monitoring determine if aerial coverage of invasive species is reduced. All mapping data shall be collected in accordance with the GIS specifications outlined below.

Report and GIS Deliverables

All data collected during the field surveys will be compiled and presented in draft and final summary reports. The draft and final reports will include maps, control area locations and descriptions, as well as, future management recommendations. All spatial data and relevant mapping information shall be provided in a Geographical Information System (GIS) format and displayed on report maps. Coordination with any Federal Agency shall be completed through the installation Natural Resource Manager (NRM) unless designated otherwise.

The Cooperator shall be required to produce the following reports:

1. Monthly progress reports for all months associated with active field work
2. Survey/work plan that identifies means and methods and follows existing survey protocols for the requested services. The plan shall identify the season, proposed routes, professionals performing the survey, and all requirements described above.
3. Draft and final technical reports. These reports will include a table of contents, purpose/objectives, study plot description, describe methods, provide the results and any analysis, make recommendations for follow-on work, and list literature cited and provide any references. Field data sheets shall be included as an appendix and a CD/DVD of the report with all photographs taken during surveys (habitat, species, field work, etc.) shall be included. GPS location data will be depicted on maps/figures and the Geographic Information System (GIS) shapefile data provided to installation and region staff in accordance with the Region's GIS specifications, which will be provided upon award.

Task 1.2. GPAOC Erosion Control Monitoring/Mitigation: The Cooperator shall perform a minimum of three (3) erosion control-monitoring events. Monitoring events will be within 72-hours following a significant rain event (0.5-inches or greater within a 24-hour period). The Cooperator shall attempt to conduct one of the three monitoring events during and active rain event provided the storm duration allows. The Cooperator shall document the condition of roadside drainage structures, the shorelines of Great Pond, Alligator Lake, and King Pond (access points and other high use areas), road shoulders and surfaces that are adjacent to wetlands, as well as, other developed areas of the installation for erosion

and/or drainage issues. Priority shall be given to areas that directly affect surface waters or other jurisdictional wetland areas. Undeveloped and/or idle lands are not part of this task.

The Cooperator will develop a draft and final inspection form that documents; date, weather, storm event information, personnel, time of inspection, issues observed, and the issue location. Draft and final inspection forms shall be provided to the installation NRM for review and approval prior to conducting fieldwork.

The Cooperator shall prepare an inspection report following each monitoring event. The inspection report shall provide photographic documentation and narratively describe active erosion control problems or drainage issues. All areas where concerns are observed shall be GPS located. GPS location data will be depicted on maps/figures and the Geographic Information System (GIS) shapefile data provided to installation and region staff in accordance with the Region's GIS specifications, which will be provided upon award and provided with each inspection report. Each inspection report shall provide appropriate recommendations for repair/restoration and the material required to accomplish the repair. Recommendations include but are not limited to regrading, planting/seeding, and culvert cleaning/replacement.

Task 1.3 Nuisance Wildlife: The Cooperator shall survey and document beaver and muskrat activity on the installation. Past issues with beaver and muskrat are documented in two areas of primary concern, a section of Collar Brook between Campground Road and the outlet to Great Pond and the wetland crossing east of Cabin 5 on Campground Rd. Beaver dams along collar brook are creating large impoundments downstream of the campground area. These impoundments are encroaching on developed areas of the installation. Culverted road crossings are frequently blocked by beaver activity, often overnight, causing road flooding and increased maintenance actions to keep the road open. This is the case for the road crossing east of Cabin 5. Installation of a "Beaver Deceiver" control device at this crossing location is scheduled for the spring of 2022.

The Cooperator shall conduct a minimum of three (3) surveys (spring, summer, fall) to document beaver activity. During initial survey, the Cooperator shall GPS locate areas of beaver activity such as beaver dam and lodge locations, the general location of impoundment boundaries for the purpose of monitoring change in size over time, and any other significant observations beneficial in informing management actions. Following the initial spring survey, the Cooperator shall prepare management action recommendations (i.e. trapping, habitat manipulation, deterrents, structures, etc...).

The Cooperator shall inspect, maintain, and make any necessary repairs to the "Beaver Deceiver" installed in the spring of 2022 during each survey effort to ensure the structure is intact and functional. Inspection will ensure the structure is functioning as intended. Minimal maintenance and repair such as removal of sticks and debris and anchorage (support posts) replacement is expected. Major repairs and/or replacement are not part of this task. The Cooperator will work with the NRM to determine best disposal method for any sticks or debris removed. No material shall be removed from the installation property as part of this task. Any change requests for this requirement will need written approval from the NRM before proceeding.

The Cooperator shall carry a budget to support potential trapping efforts required outside of the regular season for trapping in Maine. The Cooperator shall supply a trapper with the appropriate animal damage control permits/licenses or provide service through USDA APHIS for 14-days of trapping efforts. All trapping shall be conducted in accordance with State and federal regulatory requirements. All State and federal reporting requirements related to trapping are the responsibility of the trapper. All trapping activity shall be initiated through the NRM. Reports of trapping activity shall be provided to the NRM at the end of every trapping event.

The Cooperator shall prepare a brief survey report following each monitoring event. The survey report shall provide photographic documentation and narratively describe observations and issues. Observations shall be GPS located as described in the paragraphs above. GPS location data will be depicted on maps/figures and the Geographic Information System (GIS) shapefile data provided to installation and region staff in accordance with the Region's GIS specifications, which will be provided upon award and provided with each report. Each inspection report shall provide appropriate management recommendations.

Task 2. GPOAC Migratory Bird Surveys

The Cooperator will prepare and implement a migratory bird survey plan following the guidance and protocol in the Dod Coordinated Bird Monitoring Program:

<https://denix.osd.mil/dodpif/groups/monitoring-resources/dod-coordinated-bird-monitoring/>. The plan will adequately cover the suite of habitats available at GPOAC and identify potential survey routes, as well as, data collection methods. Minimum requirements for migratory bird survey efforts are as follows:

Fall Migration

The Contractor shall use standardized and accepted field survey protocols and techniques for all surveys, data recording methods and terminology listed in the Dod Coordinated Bird Monitoring Program (DCBMP). Contractor will be onsite to adequately cover the fall migration period. These visits should be adequately spaced through the migration period for this region of the eastern United States. All families of birds (including shore birds) and locations will be surveyed. Federal/state threatened and endangered species and species of concern will be surveyed and if observed noted and location data taken with GPS.

Winter Residents

The Contractor shall use standardized and accepted field survey protocols and techniques for all surveys, data recording methods and terminology listed in the Dod Coordinated Bird Monitoring Program (DCBMP). Contractor will be onsite to cover the winter resident period after the end of fall migration prior to the beginning of the spring migration. These visits should cover winter residents for this region of the eastern United States. All families of birds (including shore birds) will be surveyed. Federal/state threatened and endangered species and species of concern will be surveyed and if observed noted and location data taken with GPS.

Spring Migration Survey

The Contractor shall use standardized and accepted field survey protocols and techniques for all surveys, data recording methods and terminology listed in the Dod Coordinated Bird Monitoring Program (DCBMP). Contractor will be onsite to adequately cover the spring migration period. These visits should be adequately spaced through the migration period for this region of the eastern United States. All families of birds (including shore birds) and locations will be surveyed. Federal/state threatened and endangered species and species of concern will be surveyed and if observed noted and location data taken with GPS.

Breeding Bird Survey

The Contractor shall use standardized and accepted field survey protocols and techniques for all surveys, data recording methods and terminology listed in the Dod Coordinated Bird Monitoring Program (DCBMP). Contractor will be onsite to adequately cover the breeding bird survey period. These visits should be adequately spaced through the breeding season for this region of the eastern United States. All families of birds (including shore birds) and locations will be surveyed. Federal/state threatened and

endangered species and species of concern will be surveyed and if observed noted and location data taken with GPS.

Report and GIS Deliverables

All data collected during the field surveys will be compiled and presented in draft and final summary reports. The draft and final reports will include maps with transect locations and significant findings (i.e. protected species observations). All spatial data and relevant mapping information shall be provided in a Geographical Information System (GIS) format and displayed on report maps. Coordination with any Federal Agency shall be completed through the installation Natural Resource Manager (NRM) unless designated otherwise.

The Cooperator shall be required to produce the following reports:

4. Monthly progress reports for all months associated with active field work
5. Survey/work plan that identifies means and methods and follows existing survey protocols for the requested services. The plan shall identify the season, proposed routes, professionals performing the survey, and all requirements described above.
6. Draft and final technical reports. These reports will include a table of contents, purpose/objectives, study plot description, describe methods, provide the results and any analysis, make recommendations for follow-on work, and list literature cited and provide any references. Field data sheets shall be included as an appendix and a CD/DVD of the report with all photographs taken during surveys (habitat, species, field work, etc.) shall be included. GPS location data will be depicted on maps/figures and the Geographic Information System (GIS) shapefile data provided to installation and region staff in accordance with the Region's GIS specifications, which will be provided upon award.

Task 4. SERE Forest Management Surveys

The Cooperator shall implement forest management actions at SERE. The forest inventory and fire management plans at SERE were completed in 2015 and 2014, respectively. These plans include summaries of all forest types that occur on the property, fire hazards, as well as, potential forest health issues. In general, SERE contains approximately 13,000 acres of forested lands. No significant forest pest or disease issues at the installation have been identified to date, indicating a healthy overall forest condition. Since no active forestry occurs at the installation, wildlife habitat is an important component of the forest management plan due to the presence of Federal and State listed species. A healthy and properly managed forest can reduce impacts due to climate change, run-off, overland sheet flow, and thermal pollution to habitat potentially occupied by Federal and State listed species and is required to support the military training mission at SERE.

The programmatic objectives that have been established for management at SERE are as follows:

1. Protect and promote sustainable management of forest and land resources.
2. Manage habitats to promote use by a diverse range of wildlife species, including protection of mature tree stands and snags, and protection of tree species that provide suitable nesting and foraging habitat for wildlife.
3. Manage forest habitats to maintain wildlife travel corridors, streamside protection, and aesthetic buffer zones.
4. Maintain forest habitats to enhance plant community diversity.
5. Maintain forest habitats to ensure consistency with an ecosystem approach to land management.

Based on the composition of the Installations forests, several insects and/or diseases have the potential to occur and affect existing forest resources. Evidence of insect pests or disease has been absent on the installation since monitoring began with the development of the 2011 INRMP. Frequent monitoring and

management through approved protocol will allow the NRP to monitor and catch issues early on assisting with INRMP management responsibilities and compliance requirements. Potential forest insects pests include spruce budworm (*Choristoneura fumiferana*), forest tent caterpillar (*Malacosoma disstria*), eastern tent caterpillar (*Malacosoma americanum*), balsam woolly adelgid (*Adelges piceae*), spruce beetle (*Dendroctonus rufipennis*), and larch sawfly (*Pristiphora erichsonnii*). Potential forest diseases include root rot, which can be caused by a variety of fungi; European larch canker (*Lachnellula willkommii*) or beech bark disease (*Nectria coccinea* or *N. galligena*). The Cooperator shall provide forest health monitoring services for the aforementioned insect and/or diseases at SERE to provide advanced detection early on and to determine practices and or treatment that may be necessary to prevent widespread damage from occurring (i.e. thinning, insecticides, etc...).

The cooperator shall conduct sampling and surveillance for each insect and disease identified as having potential to impact forest health at SERE. Surveys shall adequately cover all forested habitat types and cover enough land mass to validate findings and recommendations. The cooperator shall prepare survey plan that outlines the means and methods of accomplishing the requested survey work. All survey work shall occur at the appropriate times for the requested survey work. The government can provide the maps, plans, and past reports for referencing upon the cooperators request.

A report shall be prepared documenting survey efforts and results and shall include prescriptive mitigation methods for dealing with any identified issue. It shall also cover recommendations for improving stand health and insect and disease prevention. For any identified issues or management recommendations, the cooperator shall prepare a general scope of work to remediate an issue or implement any recommended forest health actions. If insect or disease pests are observed while conducting survey work, the contractor shall notify the installation natural resource manager within 24hrs of the discovery.

Report and GIS Deliverables

All data collected during the field surveys will be compiled and presented in draft and final summary reports. The draft and final reports will include maps, survey area locations and descriptions, describe observations, as well as, future management recommendations. All spatial data and relevant mapping information shall be provided in a Geographical Information System (GIS) format and displayed on report maps. Coordination with any Federal Agency shall be completed through the installation Natural Resource Manager (NRM) unless designated otherwise.

The Cooperator shall be required to produce the following reports:

1. Monthly progress reports for all months associated with active field work
2. Survey/work plan that identifies means and methods and follows existing survey protocols for the requested services. The plan shall identify the season, proposed routes, professionals performing the survey, and all requirements described above.
3. Draft and final technical reports. These reports will include a table of contents, purpose/objectives, study plot description, describe methods, provide the results and any analysis, make recommendations for follow-on work, and list literature cited and provide any references. Field data sheets shall be included as an appendix and a CD/DVD of the report with all photographs taken during surveys (habitat, species, field work, etc.) shall be included. GPS location data will be depicted on maps/figures and the Geographic Information System (GIS) shapefile data provided to installation and region staff in accordance with the Region's GIS specifications, which will be provided upon award.

Task 5. SERE High Elevation Bird Surveys

The Cooperator shall conduct high elevation bird surveys, with a specific focus on Bicknell's Thrush (*Catharus bicknelli*), at SERE. Point count surveys will be conducted in accordance with the most current version of Mountain Birdwatch protocols initially developed by the Vermont Center for Ecostudies or an approved equivalent method. The Cooperator will work with the NRM if alternative survey method is proposed. The scope of work related to this task is based on the level of effort presented in the Mountain Birdwatch protocol.

The Cooperator shall provide a qualified biologist to conduct point counts in high elevation (>3,000 ft) spruce/fir forests at SERE. Points will be identified along a survey route which will take into account habitat type, restricted areas, access, and safety. Each survey route will contain three to six survey points and points will be spaced 250 m apart. Point counts will consist of four consecutive 5-minute counts (for a total of 20 minutes per sampling period) and will begin 45 minutes prior to sunrise in order to increase the likelihood of detecting Bicknell's Thrush. Biologists will also document the presence of other target species including Swainson's Thrush (*Catharus ustulatus*), Blackpoll Warbler (*Setophaga striata*), White-throated Sparrow (*Zonotrichia albicollis*), and Winter Wren (*Troglodytes troglodytes*).

Report and GIS Deliverables

All data collected during the field surveys will be compiled and presented in draft and final summary reports. The draft and final reports will include maps, survey area locations and descriptions, observations, as well as, future monitoring recommendations. All spatial data and relevant mapping information shall be provided in a Geographical Information System (GIS) format and displayed on report maps. Coordination with any Federal Agency shall be completed through the installation Natural Resource Manager (NRM) unless designated otherwise.

The Cooperator shall be required to produce the following reports:

1. Monthly progress reports for all months associated with active field work
2. Survey/work plan that identifies means and methods and follows requested survey protocols for the task. The plan shall identify the season, proposed routes, professionals performing the survey, and all requirements described above.
3. Draft and final technical reports. These reports will include a table of contents, purpose/objectives, study plot description, describe methods, provide the results and any analysis, make recommendations for follow-on work, and list literature cited and provide any references. Field data sheets shall be included as an appendix and a CD/DVD of the report with all photographs taken during surveys (habitat, species, field work, etc.) shall be included. GPS location data will be depicted on maps/figures and the Geographic Information System (GIS) shapefile data provided to installation and region staff in accordance with the Region's GIS specifications, which will be provided upon award.

Task 6. NSA Cutler Grassland Bird Surveys

The Cooperator shall develop and implement a grassland bird species-monitoring plan that builds off the baseline grassland bird species survey conducted in 2016 and monitoring implemented the 2021/2022 season. The purpose of this task is to document the use of the Very Low Frequency (VLF) and High Frequency (HF) antennae fields at NSA Cutler by grassland bird species over time. In Maine, 10 avian Species of Greatest Conservation Need have been identified within the guild of grassland birds and include: northern harrier (*Circus cyaneus*), upland sandpiper (*Bartramia longicauda*), American kestrel (*Falco sparverius*), horned lark (*Eremophila alpestris*), grasshopper sparrow (*Ammodramus savannarum*), field sparrow (*Spizella pusilla*), bobolink (*Dolichonyx oryzivorus*), eastern meadowlark (*Sturnella magna*), short-eared owl (*Asio flammeus*), and barn owl (*Tyto alba*). Grasshopper sparrow (endangered) and short-eared owl (threatened) are listed species in Maine.

The Cutler VLF antenna field currently consists, in part, of frequently mowed/managed grasslands known to be utilized as preferred habitat to 30 different bird species, six of which are USFWS birds of conservation concern. The VLF grassland areas are also known to support to State endangered, three State threatened, and 11 State species of special concern. Species at risk include the grasshopper sparrow, sedge wren, short-eared owl, and upland sandpiper.

The Cutler HF area consists of a 100-acre outparcel that is no longer used as part of the installations telecommunications mission. This HF antennae field consist of fallow grassland that exhibits early forest succession and is being included in the grassland monitoring program to document species composition over time as influenced by succession. Species composition data at this location will be used to inform natural resource management decisions at the installation.

The Cooperator shall develop a monitoring plan that:

1. Identifies grassland bird species known to occur or have the potential to occur at NSA Cutler.
2. Identifies monitoring protocols. At a minimum, protocols shall include total counts (total birds by species), relative species abundance (total birds by species/total birds overall), and frequency of occurrence (total point count locations where species was detected/total point count stations surveyed). The Cooperator may choose to repeat the survey protocol identified in the installations Baseline Grassland Bird Survey (New Jersey Audubon Society Grassland Bird Survey Protocol [Tsipoura et al. 2008]). Protocols shall be clearly narrated within the monitoring plan and include reproducible field data sheets for future survey efforts.
3. Identifies survey windows appropriate to document presence of migratory (spring only) and breeding grassland bird species. Special attention shall be given to State and Federally protected grassland bird species, as well as, current species of conservation concern.
4. Identify recommended survey frequency. How often surveys should be conducted (annually, every other year, etc...) to effectively monitor species population trends and use of the identified antennae field habitats, as well as, the minimum amount of surveys necessary to document migrant and breeding grassland bird species.

Upon monitoring plan approval, the Cooperator shall complete one (1), full season of grassland bird monitoring efforts to verify and improve upon the limited baseline data currently available. For the purpose of this task, the contractor shall assume:

1. Survey season will require a minimum of four (4) site visits consisting of one field day each.
2. Site visits shall coincide/overlap with the breeding season (typically May 15th to June 15th) and be spaced a minimum of seven (7) days apart.
3. Surveys will consist of a minimum of 33 fixed point-count stations, (28 in the VLF antennae array and 5 in the HF antennae array).

The Cooperator will develop a draft and final report documenting survey efforts. The report will include detailed survey methodologies (this also includes survey equipment and computer software specifications) to confirm presence/absence of a species, if applicable. The report will also include survey results, survey area locations, species and vegetation community observations, and any recommendations. Report figures will be labeled to clearly identify survey types, survey areas, species, communities, etc. Report will include survey discussion (be sure to identify: survey issues/problems; why the species was or was likely not observed; why a species may have been previously identified, but not identified during this survey effort, etc.). Report will include Management Recommendations for Species and Vegetative

Communities (also include recommended survey methodology changes or follow-on recommended surveys and why).

The Cooperator will provide GIS data that provides: survey area boundaries (polygon) [these are the areas that identify the full extent of what portion of the installation was surveyed for a particular species/community given the utilized survey technique (e.g., an acoustic device captures data from more than just a point location, it captures a larger area)]; survey transects (lines); survey point locations (points); species observation points; and extent of observed community boundaries. Contractor will collect GIS data for each confirmed species/vegetative community occurrence.

Photos shall be taken of the survey sites to document habitat at the location and provide a visual location of the survey site; any installed equipment, transects, traps, etc.; and generally capture vegetation community. Photograph restrictions apply within the VLF field. Representative plot photos absent of structures, buildings or other site identifying features related to military mission are allowed but may be required to go through security screening. The NRM will provide directives regarding base access and picture taking upon award.

The Appendix of the final report should contain a photo log. The photo log should include Project Title; Contract Number; Installation; Associated Survey Location; Latitude; Longitude; Species or Community Type; and Brief Photo Description.

All data collected at survey sites, including target and non-target species identifications, shall be recorded on datasheets and placed in an appendix of the final report. All data should have an associated Global Positioning System (GPS) location of the survey plot recorded on the datasheets and within the geodatabase to be submitted with this project. All recorded species information should be placed in the appropriate location within the Navy Geodatabase submitted for this project. For data that are collected and non-compliant with the Navy's NDM requirements, they can be placed into the geodatabase as either stand-alone feature classes or joinable tables that link to existing NDM feature classes, as appropriate.

Equipment specifications documentation, surveyor qualification documentation, and all permits associated with the project should be housed in appendices within the final report. A Latitude/Longitude list of both survey locations and observation locations should be kept in the appendix of the report.

The Cooperator shall be required to produce the following reports:

1. Monthly progress reports for all months associated with active field work
2. Survey/work plan that identifies means and methods and follows requested survey protocols for the task. The plan shall identify the season, proposed routes, professionals performing the survey, and all requirements described above.
3. Draft and final technical reports. These reports will include a table of contents, purpose/objectives, study plot description, describe methods, provide the results and any analysis, make recommendations for follow-on work, and list literature cited and provide any references. Field data sheets shall be included as an appendix and a CD/DVD of the report with all photographs taken during surveys (habitat, species, field work, etc.) shall be included. GPS location data will be depicted on maps/figures and the Geographic Information System (GIS) shapefile data provided to installation and region staff in accordance with the Region's GIS specifications, which will be provided upon award.

Task 7. NSA Cutler Deer Management

The Cooperator shall perform a deer population surveys at NSA Cutler. The survey shall be designed to estimate current population densities (seasonally) with repeatable survey methodology for on-going monitoring of deer populations at the installation. Survey development and implementation shall be

completed in accordance with the installations INRMP and the installations deer management plan developed in 2018. The Cooperator will assist the NRM with scope of work and attend conferences with Maine Division of Inland Fisheries and Wildlife to ensure conformance with MDIFW deer management protocols.

The Cooperator shall conduct adequate survey samples to document deer use throughout the year. Past survey efforts, as well as, anecdotal reports of deer observations indicate significant changes in deer density throughout the year. The Cooperator shall also survey for available winter habitat identifying and delineating any deer wintering areas found on the installation. Browse Surveys shall be conducted within the forested portions of Sprague Neck to determine impact of deer browse on forest regeneration.

Special items for consideration and inclusion in report discussion is the ability of the installation deer population to support a controlled hunt program.

The Cooperator shall be required to produce the following reports:

1. Monthly progress reports for all months associated with active field work
2. Survey/work plan that identifies means and methods and follows requested survey protocols for the task. The plan shall identify the season, proposed routes, professionals performing the survey, and all requirements described above.
3. Draft and final technical reports. These reports will include a table of contents, purpose/objectives, study plot description, describe methods, provide the results and any analysis, make recommendations for follow-on work, and list literature cited and provide any references. Field data sheets shall be included as an appendix and a CD/DVD of the report with all photographs taken during surveys (habitat, species, field work, etc.) shall be included. GPS location data will be depicted on maps/figures and the Geographic Information System (GIS) shapefile data provided to installation and region staff in accordance with the Region's GIS specifications, which will be provided upon award

Task 8. NSA Cutler Bat and Avian Acoustic and Radar Monitoring

This task entails multi-season surveys of bat and bird populations and migration monitoring using radar and acoustic study techniques. This survey will employ on-site radar during fall and spring migration periods and automated birdcall stations for the entire season to document the phenology, species composition, number, flight height, and passage rates of migrating birds. The radar units will run 24 hours a day for a thirty-day period during the estimated peak of each migration season. This task is a continuation of the same Bat and Avian Acoustic and Radar monitoring conducted in 2013, 2016 and 2019.

In addition, this task will add to the baseline information of bat utilization of the installation. The Contractor will deploy bat-recording devices at three locations and to document species composition, foraging distribution, and relative abundance of resident and migratory bats similar to previous efforts between 2013 and 2020. All acoustic monitoring will take place for one full season (April 1 through October 31) at the VLF area.

Prior to the start of any avian or bat monitoring, the Cooperator shall provide the NRM with an outline of the monitoring methodology for submittal to USFWS for approval/comments. Coordination of survey will be completed through the installation NRM.

The Cooperator shall use means and methods consistent with those utilized during previous survey work for consistency with previously collected data. Of primary importance is the use of vertical beam sonar for calculation of flight heights and passage rates for avian radar work and full spectrum acoustic units. All bat acoustic analysis shall be conducted by a State of Maine qualified bat

biologist.

The Cooperator shall be required to produce the following reports:

1. Monthly progress reports for all months associated with active field work
2. Survey/work plan that identifies means and methods and follows requested survey protocols for the task. The plan shall identify the season, equipment and equipment locations, professionals performing the survey, and all requirements described above.
3. Draft and final technical reports. These reports will include a table of contents, purpose/objectives, study plot description, describe methods, provide the results and any analysis, make recommendations for follow-on work, and list literature cited and provide any references. Field data sheets shall be included as an appendix and a CD/DVD of the report with all photographs taken during surveys (habitat, species, field work, etc.) shall be included. GPS location data will be depicted on maps/figures and the Geographic Information System (GIS) shapefile data provided to installation and region staff in accordance with the Region's GIS specifications, which will be provided upon award.

Task 9. NSA Cutler Invasive Species Control

This task shall be completed in accordance with Task 2.1.2 of the base year agreement building off the control efforts implemented in previous years.

Option Year 2 (Planned for FY24)

Task 1. GPOAC Invasive Species Control

This task shall be completed in accordance with the SOW identified in Option Year 1, Task 1.1.

Task 2. GPAOC Erosion Control

This task shall be completed in accordance with the SOW identified in Option Year 1, Task 1.2.

Task 3. GPOAC Multiple Species Surveys

The purpose of this project is to implement periodic sampling for federally listed and at-risk species at GPOAC. Physical surveys will provide quality assurance checks for previously collected data and document new occurrences. Regulations require current information on species presence/absence data as part of natural resources management and the installations Integrated Natural Resource Management Plan (INRMP). In order to maintain compliance with ESA and to meet the requirements of the INRMP, periodic surveys for ESA species shall be completed. Potential for federally listed species presence at GPOAC include Atlantic salmon, Canada lynx (*Lynx canadensis*), state and federally listed bat species, rusty-patched bumblebee and monarch butterfly. The Cooperator is responsible for identifying any new listings at the time of execution to this task and incorporate survey protocol into species surveys that attempt to document species presence and/or habitat available.

This task requires the Cooperator, in conjunction with the Navy, develop and implement species surveys that target federally protected species, as well as State listed species (i.e. little brown bat, eastern small-footed bat). The Cooperator shall possess or have the ability to obtain all the appropriate permits required to conduct the required survey work. Including, but not limited to, electrofishing and mist netting for birds and protected bat species. The Cooperator shall work with the NRM to develop survey plans to be provided to Sikes Act partners for review and approval prior to conducting any fieldwork.

Fieldwork associated with species surveys will occur during the appropriate times of year for each of the target species. The Cooperator shall anticipate the following minimum effort for field survey work covered by each subtask below:

Subtask 3.1: Atlantic Salmon Surveys: The Cooperator shall complete fish surveys and habitat at GPOAC., inclusive of Great Pond and King Pond and their tributary reaches that occur on the property. The survey shall cover a representative sample of perennial aquatic systems with the potential to provide habitat for fish species. This task shall incorporate a variety of sampling techniques (rod & reel, electrofishing, seine nets, fish traps, and environmental DNA sampling) in order to verify and/or supplement the existing fish inventory for the installation.

The Cooperator shall obtain all necessary state and federal permits to conduct sampling, all approved sampling, and backpack-electroshocking protocols will be followed. All coordination with State and Federal agencies shall be coordinated through the NRM. A draft collection permit shall be submitted to the NRM for review prior to submission to the agencies.

The Cooperator shall perform an assessment that will include desktop analysis and a minimum of two (2) two-day site visits. The site assessment should include at a minimum the following components:

1. Development of a stakeholder list (regulatory agencies, owners, private groups).
2. Research site locations in association with freshwater streams located on the GPOAC property. GPOAC contains streams and waterbodies that would normally fall within designated critical habitat for Atlantic salmon. Therefore, work will require coordination with the USFWS Maine Field Office prior to implementation. All coordination with State and Federal Agencies shall be coordinated through the NRM. The Cooperator shall be responsible for obtaining the State Scientific Collection Permit for all survey work. The Cooperator shall provide the draft scientific collection permit to the Installation and Navy NRMs for review prior to submitting to the State.
3. Prepare a draft freshwater fish species survey plan to deliver a comprehensive list of fish species occupying freshwater streams and pond(s) on GPOAC property.
4. Coordinate stakeholder participation in survey events as necessary (USFWS, MDIFW).

Seasonal Atlantic Salmon Survey

The Cooperator shall utilize methodologies, field survey protocols and techniques for all surveys, data recording methods and terminology as outlined in all necessary State and Federal permits and previously completed survey report(s). The Cooperator should plan one field visit in the spring and one in the fall. All families of fish will be surveyed. Federal/state threatened and endangered species will be surveyed and if observed noted and location data taken with GPS. Representative eDNA samples shall be collected from all survey reach locations during each survey event.

Reporting

The Cooperator shall be required to produce the following reports:

1. Monthly progress reports for all months associated with active field work
2. Fish species survey plan for review and approval by Navy and stakeholders prior to field work.
3. Draft and final fish species survey / inventory reports. Reports shall include developed, formal survey routes with points established in freshwater stream and pond habitat types with accompanying GIS route coverage. These reports will include a table of contents, purpose/objectives, study plot description, describe methods, provide the results and any analysis, make recommendations for follow-on work, and list literature cited and provide any references. Field data sheets shall be included as an appendix and a CD/DVD of the report with all photographs taken during surveys shall be included. GPS location data will be depicted on maps/figures and the Geographic Information System (GIS) shapefile data provided to installation and region staff in accordance with the Region's GIS specifications, which will be provided upon award.
4. Checklist of freshwater fish for GPOAC (within the report) and in pamphlet form.

Task 3.2 Canada Lynx Surveys

The goal of this subtask is to determine if Canada lynx utilize the installation property by building off survey efforts conducted in 2020/2021.

The survey shall adequately cover the four parcels owned by the Navy. These areas include Great Pond (East and west shoreline properties, King Pond and Alligator Lake Parcels). This survey will be conducted to ensure compliance with federal regulations and to avoid potential conflicts between the mission and T&E Species. Survey shall be conducted in accordance with Maine Department of Inland Fisheries and Wildlife (MDIF&W) and the U.S. Fish and Wildlife Service (USFWS) latest survey protocols for Canada lynx and meet the following:

1. A minimum of three tracking survey events shall occur during the appropriate survey season.
2. Surveys shall be conducted 24 to 72 hours following a snow event to allow sufficient time for animal movement and limit deterioration of track quality. If travel to the project site will take longer than one business day, the contractor shall address how they will monitor for snow events that create suitable tracking conditions and their travel response plan for meeting the previously mentioned survey window.
3. All survey routes shall be surveyed by a minimum of two trained observers on foot or a suitable, approved tracked vehicle.
4. At each lynx track intercept the location shall be marked by GPS and the following data shall be recorded; track measurements (length, width, stride, straddle, and sinking depth), direction of travel, number of lynx, a track quality index (U.S. Forest Service Technical Report PSW-GTR-157), behavioral data, habitat data, and photographs.
5. A minimum of five camera traps shall be set up at several high visibility, readily accessible sites (e.g., roadways), for the duration of the tracking surveys. The Cooperator shall propose locations to deploy the camera traps that will not conflict with the use of GPOAC property by mission tenants. The Cooperator will be responsible for providing all equipment required to establish camera traps including SD cards and power supply. All camera traps shall be secured at their location and labeled in a manner that identifies their purpose and the NRM's contact information, to deter removal by GPOAC personnel unaware of the tracking survey effort. At a minimum, camera traps shall be checked and maintained during each track survey effort.
6. Unless dictated otherwise by MDIF&W or USFWS protocols, each camera trap station will include a compact disc hung in a strategic position as a long range visual attractant, and a commercial skunk lure and a short range visual attractant (e.g., feathers) that will be placed underneath a platform on a wooden stake. Cameras will be positioned on a tree facing north, 1-2 m above the snow surface and pointed at a slight downward angle towards the wooden stake positioned 3-5 m from the camera. A GPS will be used to mark the location of each camera trap station and the local site will be marked discretely for future trap checks. Each trapline will be set for a minimum of 45-60 days and checked once every 2 weeks to download data, refresh attractants, and to ensure cameras are working properly.

Reporting

The Cooperator shall be required to produce the following reports:

1. Monthly progress reports for all months associated with active field work
2. Survey plan that identifies means and methods and follows existing survey protocols for Canada lynx surveys. The plan shall identify the season, proposed routes, professionals performing the survey, and all requirements described above. A draft plan will be reviewed by the Installation and Navy NRMs, who may provide to IFW and USFWS for approval. Approval on the plan must be received prior to implementation of field work.
3. Draft and final technical reports. These reports will include a table of contents, purpose/objectives, study plot description, describe methods, provide the results and any analysis,

make recommendations for follow-on work, and list literature cited and provide any references. Field data sheets shall be included as an appendix and a CD/DVD of the report with all photographs taken during surveys (tracks, scat, track routes equipment, etc.) shall be included. GPS location data will be depicted on maps/figures and the Geographic Information System (GIS) shapefile data provided to installation and region staff in accordance with the Region's GIS specifications, which will be provided upon award.

Task 3.3 Pollinator and Butterfly Surveys: Pollinator and butterfly surveys shall occur in accordance with the agreements base year Task 3.1.

Task 3.4 Bat Species Surveys: The Cooperator shall conduct mist netting for bat species at GPOAC following the protocol developed by the U.S. Fish and Wildlife Service (USFWS) for the northern long-eared bat summer survey guidelines. The fieldwork will consist of a two-week field season with work conducted during the appropriate timing window. Mist netting will be conducted at pre-selected sites at each installation based upon past acoustic sampling results, habitat quality and areas targeted for future project development or significant maintenance. Per current USFWS survey guidelines, each mist net site (Great Pond, Alligator Lake, and King Pond) will be sampled for nine (9) net nights (three nets per location each night for three calendar nights) beginning at sunset and lasting for at least five hours. If three locations are not available, then field team may use less (preferably two) if necessary. No more than three nets should be operated at one time if only two biologists are available to monitor. Captured bats shall be identified to species by the permitted bat biologist, and the sex, age, reproductive status, mass, and forearm length of each bat shall also be documented. Photographs shall be taken of all target species, plus representative photos of all other bat species captured.

If a reproductively active adult female or juvenile northern-long eared bat are captured prior to completing nine net nights of survey effort, then sampling may stop at that particular site and proceed to the next site. The goal would be to sample as many areas of future project development or and/or exceptional habitat as possible while remaining within budget for the project. Two mist net locations may be operated concurrently with two field teams to avoid long downtimes (no work) for field crew. Each location is required to have at least one federally permitted biologist on-site during operating periods. Survey focus will be on all federal and state protected species at the time of project award including Northern long-eared bat (*Myotis septentrionalis*), little brown bat (*Myotis lucifugus*), and eastern small-footed bat (*Myotis leibii*).

The Cooperator must possess all permits required to perform the services requested. Draft permits shall be approved by the Installation NRM prior to submission to regulatory agencies.

Reporting

The Cooperator shall be required to produce the following reports:

1. Monthly progress reports for all months associated with active field work
2. Survey plan that identifies means and methods and follows existing survey protocols for bat surveys. The plan shall identify the season, proposed routes, professionals performing the survey, and all requirements described above. A draft plan will be reviewed by the Installation and Navy NRMs, who may provide to IFW and USFWS for approval. Approval on the plan must be received prior to implementation of fieldwork.
3. Draft and final technical reports. These reports will include a table of contents, purpose/objectives, study plot description, describe methods, provide the results and any analysis, make recommendations for follow-on work, and list literature cited and provide any references. Field data sheets shall be included as an appendix and a CD/DVD of the report with all

photographs taken during surveys shall be included. GPS location data will be depicted on maps/figures and the Geographic Information System (GIS) shapefile data provided to installation and region staff in accordance with the Region's GIS specifications, which will be provided upon award.

Task 4. SERE Forest Management

This task shall be conducted in accordance with the SOW identified in Option Year 1, Task 4.

Task 5. NSA Cutler Deer Management

This task shall be completed in accordance with the SOW identified in Option Year 1, Task 7.

Task 6 NSA Cutler Invasive Species Control

This Task shall be completed in accordance with agreements base year Task 2.1.2.

Option Year 3 (Planned for FY25)

Task 1. GPOAC Invasive Species Control

This task shall be completed in accordance with the SOW identified in Option Year 1, Task 1.1.

Task 2. GPOAC Erosion Control

This task shall be completed in accordance with the SOW identified in Option Year 1, Task 1.2.

Task 3. SERE Forest Management

This task shall be conducted in accordance with the SOW identified in Option Year 1, Task 4.

Task 4. SERE High Elevation Bird Surveys

This task shall be conducted in accordance with the SOW identified in Option Year 1, Task 5.

Task 5. NSA Cutler Grassland Bird Surveys

This task shall be conducted in accordance with the SOW identified in Option Year 1, Task 6.

Task 6. NSA Cutler Deer Management

This task shall be conducted in accordance with the SOW identified in Option Year 1, Task 4.

Task 7. NSA Cutler Invasive Species Control

This Task shall be completed in accordance with agreements base year Task 2.1.2.

Option Year 4 (Planned for FY26)

Task 1. GPOAC Invasive Species Control

This task shall be completed in accordance with the SOW identified in Option Year 1, Task 1.1.

Task 2. GPOAC Erosion Control

This task shall be completed in accordance with the SOW identified in Option Year 1, Task 1.2.

Task 3. SERE Forest Management

This task shall be conducted in accordance with the SOW identified in Option Year 1, Task 4.

Task 4. NSA Cutler Bat and Avian Acoustic and Radar Monitoring

This task shall be completed in accordance with the SOW identified in Option Year 1, Task 8

Task 5. NSA Cutler Deer Management

This task shall be completed in accordance with the SOW identified in Option Year 1, Task 4.

Task 6. NSA Cutler Invasive Species Control

This Task shall be completed in accordance with agreements base year Task 2.1.2.

Substantial Government Participation

- The Navy will coordinate base access for Cooperating partner.
- The Navy will assist the Cooperators with study site selection, participate in study design and procedures, assist with surveys, review collection permits, coordinate with regulatory agencies, and review Cooperator reports.

CESU Administrative Office / Representative:

Jurmin Francis-Ross

Contract Specialist/Contracting Officer

NAVFAC Mid-Atlantic

ACQ41 EV

Phone: (757) 341-1673

E-mail: jurmin.m.francis-ross.civ@us.navy.mil

Naval Technical Representative (NTR)

Grant Harter

Naval Facilities Engineering Command

9324 Virginia Ave.

Norfolk, VA 23511

Phone: (757) 341-2109

E-mail: grant.e.harter.civ@us.navy.mil

Installation Representative (IR):

Ian Trefry

NAVFAC ML PWD Maine

Environmental Program Division

Portsmouth Naval Shipyard

Bldg. 59, Third Floor

Portsmouth, NH 03804

Phone: (207) 438-4362

Email: ian.trefry.civ@us.navy.mil