UNITED STATES MARINE CORPS
MARINE CORPS BASE CAMP BLAZ
PSC 488 BOX 105
FPO AP 96537-0149

December 19, 2024

Dr. Earl Campbell
Field Supervisor
U.S. Fish and Wildlife Service
Pacific Island Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, HI 96850

Håfa Adai, Dr. Campbell:

SUBJECT: FISCAL YEAR 2024 (FY24) ANNUAL REPORT FOR BIOLOGICAL OPINIONS 01EPIF00-2015-F-0025 AND 01EPIF00-2016-F-0185

This correspondence is submitted to satisfy the FY24 (covering October 1, 2023 to September 30, 2024) annual reporting requirements (Terms and Conditions L.5.a, p. 158) of the U.S. Fish and Wildlife Service (FWS) Biological Opinion (BO) for the Department of the Navy's (DON) Relocation of the U.S. Marine Corps from Okinawa to Guam and Associated Activities on Guam, initially issued on July 31, 2015 (01EPIF00-2015-F-0025) with a re-initiation completed on July 19, 2017 (01EPIF00- 2016-F-0185), an amendment completed on October 30, 2018, and clarifications completed on March 27, 2020 and June 24, 2020. The conservation measures and terms and conditions implemented are described in the enclosed report.

We have successfully completed Terms and Conditions 2a, 2b, 2c, 2g, 3, 4 and 5. Term and Condition 1 is on-going as it is the implementation of the conservation measures. Terms and Conditions 2d, 2e and 2f have not been initiated as the start criteria have not been met. There have been no changes to noise contour as it relates to the action; and, to date, no Mariana fruit bat habitat has been subjected to increased noise levels from aircraft operations. The Multipurpose Machine Gun range at Mason Live Fire Training Range Complex (LFTRC) is still under construction; therefore, operations have not started, and no noise studies at the Guam National Wildlife Refuge and Ritidian Point have been initiated. Term and Condition 2h is on-going as the condition is for a survey no less than annually

Implementation of the conservation measures is on-going and the U.S. Marine Corps has exceeded the success criteria for *Bulbophyllum guamense, Cycas micronesica, Dendrobium guamense, Heritiera longipetiolata, Tabernaemontana rotensis and Tuberolabium guamense* (Table 2) set forth in the BO. A summary of the completed conservation measures and metrics of the successes achieved is included below:

Vegetation Removal. As of September 30, 2024, the total habitat clearing within Guam Micronesian Kingfisher and Mariana Fruit Bat recovery habitat is 742-acres out of the 1,021 acres anticipated to be impacted by the Relocation effort. This represents a 27% reduction in the planned impacts. It is anticipated that approximately 100 acres will be needed to complete the Relocation effort, resulting in the saving of approximately 179 acres of Guam Micronesian Kingfisher and Mariana Fruit Bat recovery habitat that was projected to be lost.

Surrogate Habitat. To date, 71 acres (33%) of snail surrogate habitat have been removed out of

the 212 acres anticipated to be impacted, 742 acres (35%) of bat surrogate habitat have been removed out of 2,136 acres anticipated to be impacted, and 165 acres (49%) of butterfly surrogate habitat have been removed out of 338 acres anticipated to be impacted under the incidental take statement. No additional removal of snail surrogate and butterfly surrogate habitat are anticipated as part of the Relocation effort. An additional approximately 100 acres of impacts to bat surrogate habitat is anticipated in order to complete program objectives. This represents a significant reduction in the planned removal impacts to bat, butterfly and snail surrogate habitat.

Ungulate Fencing.

Mason Live Fire Training Range Complex (Former Northwest Field) Ungulate Control Area (UCA). In the 2017 reinitiation of the 2015 BO, the DON committed to fencing approximately 2.3 miles of the Northwest Field area (Mason) to exclude ungulates from the area. In 2018, DON contacted FWS to amend the BO to increase the amount of ungulate fencing at Mason by an additional 1.76 miles. The reason for the increase was due to a field assessment by DON biologists that the additional fencing was needed to ensure the site could be eradicated of ungulates. The original commitment of 2.3 miles of ungulate fencing was completed on time in March of 2021. The additional 1.76 miles of ungulate fencing was completed on time in March of 2022. The ungulate fences were completed in accordance with the timelines identified in our February 27, 2020 letter to FWS.

Caiguat Forest Enhancement Site (FES). The ungulate fencing of 679 acres at the northern forest enhancement site (Caiguat) was completed in November of 2020.

Haputo Ecological Reserve Area (ERA). In the 2017 reinitiation of the 2015 BO, the DON committed to fencing the Haputo Ecological Reserve Area (ERA) access trail to manage access to assist in maintaining the characteristics and integrity of the ERA. The purpose of the fencing was to prevent overuse by military and civilian personnel and potential damage to terrestrial biological resources within the ERA. However, based on a field assessment of the site, the DON determined to protect the ERA from ungulate damage, the entire 2.8 miles (4.6 kilometers) perimeter of the ERA needed to be fenced. Ungulate fencing of the southern half of the Haputo ERA was completed in FY22. Ungulate fencing of the northern half of the Haputo ERA was completed in FY23.

Ungulate Eradication.

Caiguat Forest Enhancement Site (FES). Ungulate eradication of the 679 acre FES was completed in October of 2021. In total, 654 deer and 131 pigs were removed from the site.

Mason Live Fire Training Range Complex (Former Northwest Field) Ungulate Control Area (UCA). Ungulate removal continues in the Mason LFTRC UCA with 61 pigs and 297 deer removed as of September 2023. Eradication is taking longer than anticipated as construction of the Multipurpose Machine Gun (MPMG) is actively occurring within the fenced area.

As a result of the ungulate fencing and eradication efforts to date, we have observed natural recruitment of *Cycas micronesica* (fadang) at both the Mason LFTRC and Caiguat FES and caterpillars of the Mariana eight-spot butterfly (ababang). Camp Blaz environmental staff voluntarily planted thousands of butterfly host-plants in the FES as part of on-the-job training.

C. micronesica from seed (Mason LFTRC)

Mariana eight-spot caterpillar (Caiguat FES)

Native Plant Nursery.

The native plant nursery has been receiving plant material for propagation since 2019, collecting over 83,098 seeds from 31 native plant species.

Threatened and Endangered Species Salvage and Transplant.

In the 2017 reinitiation of the 2015 BO, DON committed to a minimum of 50% survivorship of listed plants transplanted. For all species salvaged and transplanted, the DON has exceeded the 50% survival rate.

The highest success rate thus far is the replacement of 311 *Tabernaemontana rotensis* with 890 *T. rotensis*, a 286% rate of survivorship. That equates to an increase of 579 *T. rotensis* on Guam from the baseline.

In 2023, the DON voluntarily salvaged the orchids from the Water Well Field construction (P-103 project) as part of Typhoon Mawar post-disaster recovery actions with in-house staff. In September 2023, DON awarded the outplanting and maintenance contract for care and transplantation of thirty-two (32) *T. guamense* and one (1) *B. guamense* salvaged from the project footprint.

Overall, a number of ESA-listed species on Guam has been maintained or increased since the 2015 Biological Opinion. For those ESA-listed species for which the numbers have decreased, the factors leading to reduction in numbers have been associated with predation and not with DON failure to implement the terms of the underlying Biological Opinions (BO).

Species	Guam Population in 2017	Guam Population in 2023
Bulbophyllum guamense	250 individuals	10,759 individuals *(see note a)*
Cycas micronesica[+]	792,852 individuals	298,709 individuals *(see note b)*
Dendrobium guamense	253 individuals	12,619 individuals *(see note c)*
*Heritiera longipetiolata**	494 individuals	1,463 individuals *(see note d)*
*Tabernaemontana rotensis***	23,413 individuals	16,163 individuals *(see note e)*
Tuberolabium guamense	12,800 individuals	77,042 individuals *(see note f)*

Guam Micronesian Kingfisher	Extirpated	Extirpated
Mariana Crow	Extirpated	Extirpated
Guam rails	Extirpated	Extirpated
Mariana fruit bat	<40 individuals	70 individuals *(see note g)*
Serianthes nelsonii [#]	1 individual	0
Mariana eight-spot butterfly	6 locations	6 locations
Guam tree snail	20 populations	50 populations
Fragile tree snail	Two populations	Eight populations

[+] A significant percentage of the cycads observed on Guam are in poor health or dying. Extrapolation of data from the Forest Inventory and Monitoring plots (Donnegan et al. 2004; Lazaro et al. 2020) on Guam indicate an 8.1 percent average annual rate of decline, most likely due to the cycad scale (*Aulacaspis yasumatsui*; Donnegan et al. 2004; Lazaro et al. 2020, JRM 2019).
[#]*As stated in the 2015 BO, "*the last remaining adult tree continues to produce seeds, but the structure and health of the tree itself is precarious due to a variety of factors (DON 2014a, p. 58; AAFB 2015, p. 4). The tree has begun to lean in recent years (AAFB 2015, p. 4), and there has been historical storm damage, including snapping and loss of branches (J. McConnell, UOG, pers. comm. 2014). It is at further risk of toppling due to termite damage, which is visible along the trunk, and a large amount of saprophytic or epiphytic ferns which have concentrated growth within a shallow cavity on the trunk (AAFB 2015, p. 4). In addition, the canopy of the tree has experienced recent extensive defoliation, probably due to insect herbivory from *E. blanda* butterflies (AAFB 2015, p. 4)."
*Adult individuals only; does not include saplings or seedlings.
** Number of individuals includes seedlings, immature and mature plants. Feral ungulates such as introduced pigs (*Sus scrofa*), Philippine deer (*Rusa marianna*), and water buffalo (*Bubalus bubalis*) (on Guam) are a significant cause of direct mortality to *T. rotensis*, particularly to seedlings and immature plants (Kessler 2011, entire; Rubinoff and Holland 2018, p. 224, USFWS 2015, p. 59453).
(a) U.S. Fish and Wildlife Service. 2023. Species Report of Bulbophyllum guamense (siboyas halumtanu) Version 1.0. Pacific Islands Fish and Wildlife Office, Honolulu, HI.
(b) U.S. Fish and Wildlife Service. 2024. 5-Year Review, Short Form Summary: Cycas micronesica (Fadang). Pacific Islands Fish and Wildlife Office, Honolulu, HI.
(c) U.S. Fish and Wildlife Service. 2023. Species Report for Dendrobium guamense: Version 1.0. Pacific Islands Fish and Wildlife Office, Honolulu, HI.
(d) U.S. Fish and Wildlife Service. 2023. Species Report for Heritiera longipetiolata: Version 1.0. Pacific Islands Fish and Wildlife Office, Honolulu, HI.
(e) U.S. Fish and Wildlife Service. 2023. Species Report for Tabernaemontana rotensis Version 1.0. Pacific Islands Fish and Wildlife Office, Honolulu, HI.
(f) U.S. Fish and Wildlife Service. 2023. Species Report for Tuberolabium guamense Version 1.0. Pacific Islands Fish and Wildlife Office, Honolulu, HI.
(g) U.S. Navy. 2023. Monitoring Mariana fruit bats on Andersen Air Force Base, 2022. Prepared for NAVFAC Marianas, Guam. Prepared by Tammy Mildenstein, University of Guam.

Brown Tree Snake.

In the 2015 BO, the DON committed to install a brown treesnake barrier (BTS) barrier to exclude brown treesnakes from approximately 160 acres (65 ha) of limestone forest after experimental suppression activities within the Habitat Management Unit (HMU) has been determined to be successful.

In 2016, a project between Department of Defense, Environmental Security Technology Certification Program and the US Department of Agriculture was conducted which validated the number of BTS baits that landed above ground level, number of aerial deployments for reducing treated bait take by greater than 80%, duration of bait take reductions, compensatory increases in non-native rodent abundance, and impacts to non-target animals. In 2024, Nafus et. al. 2024, found iterative modification of BTS snake removal strategies to be an effective approach for maintaining a continuous decline of snakes in the treatment area. Although eradication has not been achieved, the reproductive population of snakes did not recover. The results support that eradication may not be necessary to support initial avian recovery goals.

To date, the experimental suppression activities within the HMU have not been determined to be successful. However, the Marine Corps recognized the importance of supporting BTS suppression and in FY23 obtained Congressional authorization for the construction of an approximately 180 acre multi-species barrier. This exceeds the commitment in the BO by increasing the acreage fenced by 20 acres and increasing the barrier control to include not only BTS but also ungulates, rats, and feral cats.

Conservation Recommendations.

In addition to fulfilling non-discretionary requirements, the DON has carried out the following FY24 activities to implement BO conservation recommendations from the US Fish and Wildlife Service (FWS), which demonstrates the DON's commitment to natural resources stewardship:

- Joint Region Marianas (JRM) biologists participated in FWS recovery committees for priority ESA-listed species, reviewed recovery plans to support conservation planning needs, and continued development of programmatic ESA consultations and implementation planning for a broader and proactive Mariana Archipelago Conservation Strategy.
- Marine Corps Base Camp Blaz (MCBCB) maintained and repaired ungulate control fencing, continued ungulate control and, performed invasive ant eradication efforts and turtle nesting monitoring efforts at the Haputo Ecological Reserve Area, which is part of the Guam National Wildlife Refuge (GNWR) – JRM Overlay Units.
- MCBCB coordinated with GNWR Ritidian Unit and US Geological Survey staff to ensure proper coordination and continuation of Department of Interior conservation missions during range construction and activation activities.
- MCBCB sought and received the issuance of a permit for FWS-sponsored captive-rearing of endangered snails from the Haputo Ecological Reserve Area.
- MCBCB entered into a $1.5M cooperative agreement with the Tinian Mayor's Office for enhancement of limestone forest vegetation along a nature heritage trail outside the Tinian Military Leased Area.
- JRM continued implementation of its Readiness and Environmental Protection Integration (REPI) conservation Memorandum of Agreement (MOA) with Government of Guam (GovGuam) that has resulted in $13M of conservation funds obligated for voluntary and proactive forest enhancement, watershed restoration, and other habitat support initiatives that will benefit GovGuam conservation areas and the local community.
- JRM REPI program staff obtained formal designation of a Guåhan Sentinel Landscape, including working with the Sentinel Landscape Coordinator to finalize documents in response to Federal Coordinating Committee comments, which would establish a broader framework of collaboration with the US Department of Interior and US Department of Agriculture as well as various non- profit organizations to support increased conservation and address climate change on GovGuam and private lands.
- MCBCB conducted in-house typhoon debris and illegal dump removal at the South Taguac FES's future ungulate fence alignment route to ensure safe access for conservation work.
- MCBCB awarded a trail improvement project at the HERA trail to control erosion, repair safety rails and stairways, and install access control nets to ensure future conservation

access to the HERA is protective of sensitive resources.

- MCBCB, with in-house efforts, produced an additional series of video and print articles on various listed species conservation work to be used for public outreach and education.
- JRM REPI program staff continued to work with the Guam Preservation Trust to perform land surveys and appraisal of an approximately 83 acre proposed conservation easement on privately-owned limestone forest and archaeological complex in the Hila'an area.

If you have any questions regarding this annual report, the DON's technical point of contact is Ms. Lauren Gutierrez. She can be reached at (671) 686-1299 or email at lauren.e.gutierrez7.civ@us.navy.mil.

Senseramente,

Digitally signed by BORJA.ALBERT.T.1283962918
Date: 2024.12.19 12:01:10 +10'00'

Albert Thomas T. Borja
Installation Environmental Program Director
By Direction of the Commanding Officer

Enclosure 1. Annual Report of the Biological Opinion for the Department of the Navy's Relocation of the U.S. Marine Corps from Okinawa to Guam and Associated Activities on Guam

Copy to (via email):
Chief of Naval Operations (N45)
Headquarters Marine Corps (Installations & Logistics)
Headquarters Marine Corps (Plans, Policy & Operations)
Joint Region Marianas
Naval Facility Engineering Systems Command Pacific
Naval Facility Engineering Systems Command Marianas
United States Fish & Wildlife Service, Pacific Region

Annual Report for the Biological Opinion for the Department of the Navy's Relocation of the U.S. Marine Corps from Okinawa to Guam and Associated Activities on Guam

Reporting Period – October 1, 2023 to September 30, 2024 (FY 2024)

Introduction: This annual report addresses the implementation of the conservation measures and terms and conditions in fiscal year 2024 (FY24) for the relocation of Marine Corps personnel from Okinawa, Japan, to Guam. The format of the annual report follows the format of the biological opinions, amendments, and clarifications previously published to document this undertaking (2015, 2017, 2018 and 2020).

The various conservation measures and terms and conditions are either programmatic or project-specific, with varying start requirements within the overall multi-year construction program schedule and into the operational phase of the Relocation efforts. Generally, programmatic measures are not specifically tied to construction activities while project-specific requirements involve measures that are prompted by construction activity or habitat removal (e.g., species translocation, green waste reuse, and marking of project limits). Construction-related ground disturbance for the MCBCB main cantonment and ranges began in earnest in calendar year 2018. Operational and training-associated requirements have not begun as the relocation of Marines to Guam is not anticipated to begin until the end of calendar year 2024.

In FY24 the Department of the Navy (DON) successfully implemented multiple Biological Opinion (BO) requirements including initiatives to effectively minimize the risk of invasive species spread through biosecurity programs and outreach which continued throughout this reporting period. An overall map view of BO-associated activities implemented at MCBCB is provided as Attachment 2. Post-Typhoon Mawar recovery of conservation infrastructure, such as ungulate fences, progressed significantly to the point that re-eradication of deer/pigs in sections of Caiguat FES was completed, with other large areas to follow in FY25. Although some listed plants were lost due to Typhoon Mawar, MCBCB continues to exceed the minimum 50% survivorship criteria for all plant species under its care. MCBCB's husbandry of 100 *Serianthes* seedlings continues to be a high priority, including accelerating scope development for the associated long-term *Serianthes* seed storage project planned for award in FY25. Finally, through efficient use of space during project design, and with only a handful of smaller-scale site development projects remaining in the future, only 73% (742 ac) of the planned 1,021 acres of recovery habitat removal has occurred (active projects are listed in Appendix I).

PART I: BIOLOGICAL OPINION 013P1F00-2015-F-0025 OF JULY 31, 2015 (2015 BO)

1. General Conservation Measures to Contribute to Recovery of Listed Species Forest Enhancement: Includes the installation of ungulate fencing, removal of ungulates and invasive plants, and outplanting of native plant species on approximately 1,000 acres in Finegayan. Forest enhancement must begin commensurate with the amount of recovery habitat cleared by the Department of Navy (DON) related projects.
Note: The 2017 BO later clarifies that the forest enhancement program will require at least a 30-year effort and that the timeline of initiation of individual forest enhancement projects will be based on the construction program timeline as Military Construction (MILCON) funds for conservation measures become available through MILCON project awards (construction phase completion is anticipated by early 2030s).

a. Forest Enhancement: Includes the installation of ungulate fencing, removal of ungulates and invasive plants, and outplanting of native plant species commensurate with the amount of recovery habitat cleared by the Department of Navy (DON) related projects.

Conservation Measure Implementation: As of September 30, 2024, the total clearing associated with Guam Micronesian Kingfisher and Mariana Fruit Bat recovery habitat includes approximately 742-acres (300-ha) (Attachment 1) out of the approximately 1,000 acres anticipated to be impacted as part of implementation of the proposed action.

As a result of typhoon damages to the ungulate fencing that encloses Forest Enhancement Sites (FES), a contract for fence repair and replacement was awarded in FY23, with fencing repairs slated to begin early FY25. Fencing to be repaired includes 4 miles at Mason Live Fire Training Range Complex (LFTRC), formerly Northwest Field (NWF), and 4.2 miles at Caiguat FES. Installation of South Taguac FES ungulate exclusion fencing was awarded with FES ungulate fence repair project, which will consist of 2.1 miles of ungulate fence installation and encompass 273 acres of Taguac FES. Installation was delayed, but is anticipated to be completed in FY25. Ungulate eradication for South Taguac has been awarded and will commence when the fence is completed.

Due to the ungulate fence damage from the typhoon, agreements to re-eradicate Caiguat FES and Mason LFTRC were awarded in late FY23 and were ongoing in FY24. Re-eradication of Caiguat FES Phase II is anticipated to be complete by end of calendar year 2024 with re-eradication of Caiguat FES Phase I to occur when fence repair is complete. To date, 31 deer and 25 pigs have been removed from Caiguat FES Phase II following re-entry into FES areas due to fences damaged by Typhoon Mawar.

The DON continued mechanical and chemical removal of *Antigonon leptopus* and *Mimosa diplotricha* in Taguac and Caiguat FES Phase I through early FY24. Removal will continue once typhoon damaged fence repair is complete. Contracts for the propagation, planting, and establishment of dominant and rare native limestone forest species in Caiguat FES Phase I were ongoing in FY24 and planned through FY28. Outplanting and invasives species management implementation planning for Caiguat FES Phase II was completed in FY24.

b. Guam *Serianthes nelsonii* Adult Tree: Includes repair and maintenance of ungulate exclusion fencing around the adult *Serianthes* tree at Mason Live Fire Training Complex

(LFTRC) (formerly Northwest Field) to protect it from ungulates as well as outplanting for survivorship to adulthood of at least 30 individuals of *Serianthes nelsonii* and access to the *Serianthes* adult tree at Mason LFTRC for seed collection and seedling rescue. Additionally, fencing and eradication within the overall Mason LFTRC provides secondary ungulate protection to the adult *Serianthes* tree and surrounding habitat.

The 2015 BO included a conservation measure to "ensure that seeds from the Guam adult *Serianthes* tree will be collected by entities specified on recovery permits, provide storage for these seeds, and provide funds for *Serianthes* seed viability testing."

Conservation Measure Implementation: In March of 2022, 4.1 miles of ungulate fence installation was completed at Mason LFTRC, completing the fencing identified in the conservation measure.

No seed has been collected by contractors or personnel associated with the Marine Corps relocation program. The FWS has issued three 10(a)(1)(A) permits for the collection of *Serianthes nelsonii* seeds that include authorization to collect 100 percent of the seeds from the remaining tree on Guam. The Marine Corps relocation program is obtaining seed from the permittees. The University of Guam provided 199 *Serianthes nelsonii* seeds from the storage lab for propagation purposes. Out of the 199 seeds that survived germination and outplanted in Caiguat FES, there are now 100 saplings under active maintenance and monitoring (**Table 1**).

Table 1. *Serianthes* that were propagated for outplanting into FES and are now under active maintenance and monitoring (i.e. Pending Turn Over to MCBCB).

Species	BO Requirement	Pending Turn Over to MCBCB	Turned Over to MCBCB	Individuals under DON Control
Serianthes nelsonii	**30**	100	0	**100**

Since July 2023, access to the adult *Serianthes* tree has been coordinated by Marine Corps Base Camp Blaz (MCBCB) staff after completing the transition from Andersen Air Force Base.

The adult *Serianthes* tree sustained serious damage during Typhoon Mawar as previously reported to FWS in 2023. Based on a September 13, 2024, report from the Guam Plant Extinction Prevention Program, mortality is confirmed with no living tissue detected. A draft public service announcement to inform the community of the adult *Serianthes* tree's demise was submitted to USFWS on October, 7, 2024. The existing fencing shall be maintained to protect surviving saplings and seedlings in the protected area to facilitate ongoing conservation efforts. The scope development for the long-term seed storage project was initiated and is planned for award in FY25.

c. Sea Turtle Public Outreach and Coordination: Reporting requirements are not applicable for sea turtles as sea turtles were addressed through informal consultation. Refer to FWS letter of March 27, 2020. The conservation measures identified by the DON will be implemented as stated in the informal consultation.

d. Brown Tree Snake (BTS) Control and Suppression: Includes implementation of projects collaboratively developed with the BTS Technical Working Group Strategic Plan

and the installation of BTS barriers.

Conservation Measure Implementation: In accordance with the BO requirement for brown tree snake (BTS) control and suppression project implementation for 10 years starting from main cantonment construction, JRM has continued to support selected projects identified as priorities in the BTS Technical Working Group Strategic Plan. BTS project funding support specifically for the Marine Corps Relocation began as early as FY13, which is well ahead of the main cantonment construction award in August 2017. Prior DON funding supported projects including artificial bait development, trial eradication of BTS via aerial toxicants, aerial toxicant bait manufacturing improvements, experimental full-scale landscape BTS suppression via aerial toxicants, bait tube trapping and dose improvements, optimized low-density BTS monitoring tools, refurbishment of the USGS BTS Closed Population facility BTS exclusion fence, and fenced/unfenced landscape- scale BTS eradication efficacy studies.

Based on a 2022 evaluation of modeling data, the required predation thresholds may need to be lower than what has been demonstrated with BTS management (McElderry 2022). The DON's intent with future projects is to identify and use cost-effective technology to severely suppress or eradicate BTS while studying at what point BTS predation levels can be reduced to support avian species recovery actions.

2. Conservation Measures to Minimize the Effects of Construction

a. Contractor Education Program: Ensure that construction contractor personnel are informed of the biological resources in the project area, including invasive species, special status species, avoidance measures, and reporting requirements.

Conservation Measure Implementation: Contractors from all active construction projects were provided training by the MCBCB Natural Resources staff in FY24.

b. Contractor Plans and Specifications: Construction will occur within the limits of construction shown in the plans and specifications.

Conservation Measure Implementation: Construction contracts have language included which requires the construction contractor to stay within the limits of construction.

In FY24, there have been no instances of construction impacts outside of project limits, and one of two restoration actions have been completed from FY23 impacts.

On September 19, 2023, MCBCB reported to FWS the overflow of silt-laden stormwater from the P-735 construction site that caused the mortality of five *Serianthes* seedlings within the fenced area of the mature *Serianthes* tree adjacent to the Multi-Purpose Machine Gun Range project. The prime contractor has since increased their stormwater basin capacity and has prevented further overflows. In addition, the contractor has begun implementation of a propagation and outplanting plan to mitigate for impacts attributable to the stormwater overflow.

Impacts of Typhoon Mawar and Recovery Actions: In May of 2023, Typhoon Mawar passed through Northern Guam as a Category 4-equivalent typhoon, bringing hurricane-force

winds and heavy rain. The typhoon's impact resulted in construction shipping containers from adjacent construction project sites being blown into FES. In FY24 all shipping containers blown from the typhoon into the FES were removed.

At the P-735 MPMG range construction project, aggregate eroded outside of the project limits due to scouring by Typhoon Mawar-driven flooding, impacting approximately 0.15 acres of adjacent forest outside the project limits. No ESA-listed species were impacted. The P-735 construction contractor voluntarily completed hand removal of the typhoon-eroded aggregate in FY24.

c. Pre-construction Surveys for the Mariana Fruit Bat: For projects within or in the vicinity of suitable fruit bat habitat, surveys following the FWS-approved Joint Region Marianas (JRM) protocol will be conducted one week prior to the onset of work.

Conservation Measure Implementation: To further minimize potential impacts to Mariana fruit bats, MCBCB continued to provide natural resources awareness training to all contractor and DON personnel working within the proposed action footprint. Natural resource awareness training aids in the identification of Marina fruit bats in the field and provides information on reporting protocols for sightings of Mariana fruit bats.

In FY24, MCBCB staff conducted fruit bat surveys prior to vegetation clearing for the P-187 Multi-Species Barrier construction project. No fruit bats were observed during surveys.

The contractor daily fruit bat monitoring logs are large files and can be made available for all active construction projects upon request.

d. Guam Landscaping Guidelines: Native or non-invasive species will be planted in all new landscapes.

Conservation Measure Implementation: Guam Landscaping Guidelines are included in all construction contracts awarded to date. The latest revision of the guidelines was distributed to all nurseries on Guam in October 2022 to support the use of native and non-invasive plants in landscaping for MCBCB facilities. The Guam Landscaping Guidelines promotes the use of at least 50% native plants in project landscaping plans.

FY24 landscaping actions took place for the following horizontal and vertical projects: J-008, J-011, J-014, J-015, J-017-I/III, J-017-II, J-023, J-025, J-031/033, J-034, J-035, J-032/036/037/038/039, P-103, P-270, P-280, P-296, P-305, P-310, P-311, P-312/804, P-317, P-459, P-459B, P-735, P-802, and P-803. Oversight and monitoring for natural resources compliance was conducted by MCBCB Natural Resources staff and contracted personnel for all active construction sites.

e. LFTRC Range Berm Controls: LFTRC range berms will contain native or non-invasive herbaceous vegetation, and other engineering controls.

Conservation Measure Implementation: Clearing and grubbing for all five ranges was completed in FY24; however, berm construction is still underway for P-735 Multipurpose Machine Gun Range. The conservation measures for the MILCON P-735 project berm will commence following the completion of the berm construction. Contract negotiations for the outplanting of butterfly host plants at the four completed berms being constructed by

MILCON P-715 are ongoing.

f. Lighting Installation: Hooded lights will be used to the maximum extent practicable at all new roads and facilities within fruit bat roost areas.

Conservation Measure Implementation: There are no known fruit bat roost areas in areas where new roads and facilities have been constructed. Hooded lights have been installed at four of the five ranges within the LFTRC. The fifth range is still under construction.

The reporting requirement for sea turtles is not applicable in this annual report as sea turtles were addressed through informal consultation. Refer to FWS letter of March 27, 2020. The conservation measures identified by the DON for sea turtles will be implemented as stated in the informal consultation.

g. Monitoring Construction Contractors: The DON will be responsible for oversight of avoidance, minimization, and conservation measure implementation by the contractors for projects associated with the proposed action.

Conservation Measure Implementation: Oversight for BO compliance was completed by MCBCB staff for all active construction projects. MCBCB staff performed inspections of construction equipment and supplies to ensure they are free of invasive species. MCBCB staff inspected all active project sites to ensure impacts to listed species are avoided and impact to their habitats did not occur outside of the designated project footprints.

3. Conservation Measures to Minimize the Effects of Invasive Species:

a. Onsite Vegetation Waste Management: Green waste is handled by the contractors at designated laydown areas within the limits of construction. Contractors are required to divert all green waste from disposal. Larger green waste, consisting of trees and stumps, is processed into mulch, while smaller green waste is processed into compost.

Conservation Measure Implementation: Onsite vegetation waste management procedures are included in all construction contracts awarded to date. All green waste generated has been re-used on-site as mulch or compost.

b. DON's Final Guam Landscaping Guidelines: The DON has developed a manual providing landscaping design guidelines specific to appropriate plant selection and establishment for all the DON construction activities on Guam.

Conservation Measure Implementation: Guam Landscaping Guidelines are included in all construction contracts awarded to date. The most recent revision of the guidelines was distributed to all nurseries on Guam in October 2022 to support the use of native and non-invasive plants in landscaping for MCBCB facilities.

MCBCB staff completed oversight for BO compliance, including Guam Landscaping Guidelines implementation, for all active construction projects.

c. Biosecurity Outreach and Education: The DON has initiated and will continue to

implement a targeted, comprehensive biosecurity outreach and education program for Department of Defense (DoD) and civilian populations. The biosecurity program focuses on preventionI with a goal to minimize the effects of invasive species through awareness and outreach which educates individuals on prevention practices. The biosecurity program also addresses invasive species pathways and management techniques.

Conservation Measure Implementation: In FY24, the outreach and education project used TV, radio and social media platforms. Social media efforts exceeded contractual audience measurement targets.

The DON continued collaboration with Government of Guam's Department of Agriculture (DoAG) Biosecurity division linking social media ads to DoAG's homepage. The DON also initiated development of additional informational videos in anticipation of the arrival of the first major influx of USMC personnel in FY24.

d. Hazard Analysis Critical Control Point (HACCP) Planning: HACCP planning is a pathway management tool that provides a comprehensive method to identify risk and implement procedures to prevent spread of invasive species at critical control points along transportation pathways.

Conservation Measure Implementation: All construction contracts contain a requirement to develop a Hazard Analysis Critical Control Point (HACCP) Plan, which will identify risks and potential pathways for non-native species and outline procedures for controlling and removing the risks identified. MCBCB in-house and contracted biomonitors regularly check all active construction sites for contractor implementation of project-specific control measures.

HACCP Plan report files are large and will be made available upon request.

e. Monitoring to Evaluate the Effectiveness of HACCP: To document the effectiveness of HACCP implementation at construction sites, the DON has developed and implemented a long-term monitoring program for terrestrial vegetation. If new non-native, invasive plant species are detected, the DON will notify the FWS and will develop and implement an eradication plan or control effort to prevent infestation. In addition, the DON will implement an early detection and rapid response component covering the discovery of an incipient invasive species in the proposed action area.

Conservation Measure Implementation: The requirement to evaluate effectiveness of HACCP has been included in Unified Facilities Guide Specifications under Supplemental Temporary Environmental Controls DPRI SECTION 01 57 19.04 3.1.4 Biosecurity. All active construction contractors are implementing their approved HACCP plans.

In FY24, long-term vegetation program HACCP evaluation surveys were conducted for J-609, P-187, P-290, P-296, and P-735. No new non-native invasive species were detected in FY24 as a result of construction or other activities that are part of the proposed action.

f. Brown Tree Snake Interdiction: The DON has committed to funding any increase of current federally funded BTS interdiction measures (in Guam, CNMI and Hawaii) where the increase is related to direct, indirect, and induced growth caused by the Marine Corps relocation to Guam. The DON will ensure that personnel using the LFTRC know the

importance of the Closed Population Facility and maintenance of the integrity of the fence.

Conservation Measure Implementation: The DON has worked with the United States Department of Agriculture (USDA) and the FWS to determine BTS interdiction cost increases. As of September 30, 2024, there has been no measurable increase in interdiction costs according to JRM and USDA.

g. Coordination with U.S. Geological Survey (USGS) on BTS: The DON will ensure through briefings or information packages that personnel using the LFTRC know the importance of the USGS facility and the critical importance of maintaining the integrity of the Closed Population Facility fence. Procedures developed as part of the MCBCB Range Regulations for the LFTRC will ensure range user awareness of protection requirements and the requirement that USGS be immediately notified in the event that the fence is accidentally damaged so the fence can be quickly repaired.

Conservation Measure Implementation: MCBCB has developed maps in support of MCBCB Range Regulations that delineate the USGS-operated research facility as an "off-limits" area of the LFTRC. USGS personnel have coordinated with MCBCB Range Control regarding the importance of the USGS research facility, including the schedule of activities to maintain the integrity of the facility fence line.

4. Conservation Measures to Minimize the Effects of Fire

a. Fire Management: Fire management is a key component of range management. The Fire Management Plan will be finalized for the LFTRC prior to operation of the first range at the LFTRC.

Conservation Measure Implementation: The DON prepared an Integrated Wildland Fire Management Plan (IWFMP) based on FWS July 2022 comments, and revisions were approved by the Service. The IWFMP has been accepted by LFTRC Range Control for incorporation into the MCBCB Commanding Officer-approved range regulations.

5. Conservation Measures Addressed under Part IV.

6. Other Actions Considered for Analysis

a. Guam Micronesian Kingfisher (GMK) Memorandum of Agreement (MOA): Since the signing of the GMK MOA in 2015, the DON has funded a number of projects in support of MOA objectives, including brown tree snake eradication trials, allocating funds for staffing, and planning and compliance activities in support of management actions. In addition, in recognition of the need for long-term planning guidance, the DON awarded the 10-Year GMK MOA Implementation Plan project in FY17, which serves as a foundational reference for cooperative investment and risk management planning. The DON and FWS have relied upon this plan, in conjunction with annual BTS research updates and discussions held with BTS Technical Working Group to address BTS issues.

In FY24, five BTS projects were funded for both fenced and unfenced landscapes: (1) BTS bait procurement, (2) Aerial Delivery System (ADS) operations and monitoring, (3) multi-tool BTS management/monitoring/analysis, (4) BTS telemetry, monitoring, and analysis, and (5) Automated Dispensing Module (ADM) intellectual property purchase.

b. Terms and Conditions: Terms and Conditions from the 2015 BO are superseded by the 2017 BO amendment.

PART II: BIOLOGICAL OPINION 01EPIF00-2016-F-0185 OF JULY 19, 2017 (2017 BO)

1. General Conservation Measures to Contribute to Recovery of Listed Species

a. Fencing of the Haputo Ecological Reserve Area (ERA) Access Trail, Signage, and Education: The fencing will prevent overuse by military and civilian personnel and potential damage to terrestrial biological resources within the ERA.

Conservation Measure Implementation: Ungulate fencing of the southern half of the Haputo ERA was completed in FY22; however, fencing was significantly damaged as a result of Typhoon Mawar. A contract for fence repair and replacement was awarded in FY23. Fence repair has been delayed due to subcontractor scheduling challenges due to high volume of work in public and private sectors, but is anticipated to commence early FY25.

Haputo ERA signage was installed in FY24 and focused on environmentally responsible and culturally sensitive recreational use of the ERA with instruction inclusive of, but not limited to, the following:

1. Respect latte stone areas;
2. Do not touch snails;
3. Do not touch turtles or their nests/eggs.

b. Pre-construction Survey, General Listed Plant Salvage and Translocation: The DON will conduct pre-construction surveys to identify all listed plant species prior to the commencement of construction activities. If pre-construction surveys identify a listed plant species present in the construction area and the individuals cannot be avoided or translocated, then healthy plant material will be salvaged or available seeds will be collected, and such material will be housed in the native plant nursery or directly transplanted into protected habitat or forest enhancement sites.

Conservation Measure Implementation: In FY24 the DON conducted pre-construction surveys for MILCON projects P-608 and P-103. MCBCB biomonitors identified four (4) *Dendrobium guamense* within the P-608 proposed laydown. These findings will be used to develop a contract for salvage and outplanting of ESA-listed species salvaged from the final project footprint. Within the P-103 project, MCBCB biomonitors identified eighteen (18) *Tuberolabium guamense* and nine (9) *Bulbophyllum guamense*.

c. Native Plant Nursery: The native plant nursery was developed for the storage and propagation of native and listed plant species associated with the proposed action.

Conservation Measure Implementation: As of September 30, 2024, 890 *Tabernaemontana rotensis* and 11 *Heritiera longipetiolata* that were outplanted in Caiguat Forest Enhancement Site (FES) by the contractor and management of the plants was turned over to MCBCB. Trees were accepted based on the success criteria established in the outplanting contract: trees must exhibit generally good vigor, trunk growth, canopy spread, and has no sign of mechanical, pest, or pathological damage twelve (12) months post outplanting. Maintenance and monitoring of the plants is ongoing through FY25 for an additional fourteen (14) *H. longipetiolata*.

The contract for native plant nursery management, and seed collection and propagation was active through this fiscal year.

d. Authorized Biologist Qualifications and Propagation/Translocation Authorization Process: Prior to commencing transplantation of the listed species the DON shall submit a statement of qualifications for potential biologists to the FWS.

Conservation Measure Implementation: The DON did not submit any requests for authorized biologists for this fiscal year. All on-going projects have previously approved authorized biologists.

e. Annual Reporting of Conservation Measures: The authorized biologist shall record each observation of each species handled in an annual monitoring report.

Conservation Measure Implementation: No salvage activity occurred in this reporting period. Thus, no records were provided.

f. Avoidance of Listed Orchid Species in Small Location at Finegayan: The DON will not construct within the area designated as "No Construction Area" within the main cantonment because the location is not suitable for construction, as it serves as habitat for a large number of ESA-listed orchids. The area is known to contain approximately 816 *T. guamense* and one *D. guamense* orchids.

Conservation Measure Implementation: No construction has occurred within the area.

g. Forest Enhancement Sites, Ungulate Eradication Areas and BTS Exclusion Fences: This conservation measure contributes to the recovery of listed species within two FES (Caiguat and Taguac), the Mason LFTRC (former NWF) Ungulate Control Area, and through the installation of two BTS exclusion fences (north unit and south unit).

Conservation Measure Implementation: Forest enhancement and restoration activities conducted to date include:

1. Identification of forest restoration/enhancement blocks **(Complete)**;
2. Mapping the proposed forest restoration/enhancement area boundaries **(Complete)**;
3. Installation approvals obtained for specific area of forest to be restored or enhanced and vegetation clearance approach for permanent ungulate fences, access-grid trails, and temporary cross fencing **(Complete)**;
4. Obtaining clearance for any ground disturbing activities from Unexploded Ordnance (UXO) specialist **(Ongoing/As Needed)**;
5. Performing forest inventory for species density and dominance **(Complete)**;
6. Constructing permanent ungulate exclusion fence around perimeter of the

enhancement sites. **Completed:** Caiguat Phase I ungulate fence installation was completed in FY20. Caiguat Phase II ungulate fence installation was completed in FY21. **Ongoing:** The P-187 multi-species barrier fence for North Taguac FES will also function as a permanent ungulate exclusion fence. Construction is anticipated through FY26. Repair of typhoon damaged fencing and the enclosure of South Taguac FES were awarded in FY23 are slated to begin in FY25;

7. When fencing is complete, begin the ungulate removal program. Ungulate removal in Caiguat Phase I was completed in October of 2020. Ungulate removal in Caiguat Phase II was completed in October 2021. **Ongoing:** Re-eradication efforts were required at the Caiguat FES following ungulate re-establishment after Typhoon Mawar due to fence damage. As of end of FY24, 31 deer and 25 pigs have been removed from Caiguat FES Phase II. Ungulate removal Mason LFTRC is planned for completion in FY25 and re-eradication of Caiguat Phase 1 will begin in FY25;

8. Monitor ungulate removal program. Based on ungulate monitoring results, implement further ungulate control activities to achieve ungulate eradication **(Ongoing)**;

9. Identify compatible invasive plant removal tools and native plant species planting palettes to be used for individual work plans for forest enhancement projects. A contract for large scale invasive tree removal and native plant outplanting for the first two blocks of the Caiguat FES Phase I was awarded in FY23. MCBCB has approved the contractor plant list, and seed collection and propagation is ongoing **(Ongoing)**;

10. Surveys for listed species are required for avoidance during intrusive work such as excavation for outplanting, irrigation line placement, ungulate net barriers, and establishment of maintenance trails. **Completed:** Surveys for listed species within Caiguat FES Phase I were completed in FY22. Surveys for listed species in North Taguac FES were completed in FY23. Surveys for listed species in South Taguac FES were completed in FY24. **Ongoing:** Surveys for listed species in Caiguat FES Phase II will commence in FY25 upon removal of blockage from post-typhoon vegetation debris;

11. Although planting during the wet seasons is preferred, irrigation is required for flexibility to perform forest enhancement work during the dry season or during a wet season with less-than-anticipated average rainfall**.** Prior to outplanting, installation of irrigation lines and access paths to facilitate outplanting and invasive plant control were installed in Caiguat FES Phase I in FY23. Damage to this infrastructure occurred during Typhoon Mawar and a contract to restore the lines and paths was awarded in FY24. Installation of irrigation lines and access paths for Caiguat FES Phase II will begin in FY25. A contract for large scale invasive tree removal and native plant outplanting within the first two blocks of the Caiguat FES Phase I was awarded in FY23. A contract to provide water to support outplanting in Caiguat and Taguac FES is planned for award in FY25 **(Ongoing)**;

12. Conduct vegetation and ungulate monitoring, repair fencing, implement further

ungulate removal activities, control invasive plants, and outplant native species. A contract to provide irrigation to support outplanting in Caiguat and Taguac FES is planned for award in FY25. A contract for fencing repairs was awarded in FY23. A contract for large scale invasive tree removal and native plant outplanting the first two blocks of the Caiguat FES Phase I was awarded in FY23 **(Ongoing)**; and

13. If a typhoon occurs during the forest enhancement process, fences will be inspected, repaired and if fences have been breached, conduct necessary ungulate control. A damage assessment was completed immediately after Typhoon Mawar. Ungulate fence repair/re-installation and re-eradication projects were awarded September 2023 **(Ongoing)**.

Incidental Impacts to Listed Species: On September 23, 2024, MCBCB notified FWS of branch pruning impacts to four *Tabernaemontana rotensis* that were cut by FES ungulate depredation contractors during emergency ungulate removals as part of recovery work after Typhoon Mawar in 2023. Since the incident, the following mitigation actions have been implemented: 1) demarcation quality checks by MCBCB in-house and contracted biomonitors, and 2) ESA-listed species awareness training for the ungulate depredation contractor. Additionally, as mitigation the contractor has committed to outplanting six *T. rotensis* followed by twelve (12) months of maintenance and monitoring planned through FY25.

h. Brown Tree Snake Exclusion Fences:

Conservation Measure Implementation: The commitment to install a brown tree snake (BTS) barrier to exclude BTS from approximately 160 acres (65 ha) of limestone forest was based on the current experimental suppression activities within the Habitat Management Unit (HMU) having been determined to be successful. Although eradication efforts within the HMU has not been determined to be successful, the DON obtained Congressional authorization for the construction of an approximately 180 acre barrier to control BTS, ungulates, rats, and cats.

The MILCON P-187 Multi-Species Barrier (MSB) project awarded in FY24 is the largest single invasive wildlife exclusion barrier on Guam to date. P-187 construction is in progress. Eradication efforts for BTS, rats, cats, and ungulates within the MSB project area will occur concurrently or post-construction based on timing of funding availability.

i. Northwest Field Ungulate Control Area: Construct an ungulate exclusion fence to exclude feral ungulates from the LFTRC in NWF.

Conservation Measure Implementation: At the Mason LFTRC, 4.1 miles of ungulate exclusion fence installation was completed in March 2022. The ungulate fence and follow-on eradication will exclude ungulates from a total of approximately 382 acre of ESA-listed species habitat consisting of 218 acre (88.2 ha), 66.7 acre (27.0 ha), and 97.1 acre (39.3 ha) of primary limestone forest, secondary limestone forest, and herbaceous scrub, respectively.

Immediately after the Typhoon Mawar, an assessment of LFTRC ungulate fencing was conducted. The contract for fence repair and replacement was awarded in FY23 and is anticipated to begin in FY25.

2. Conservation Measures for Specific Species

a. Mariana Eight-Spot Butterfly: The DON will conduct pre-construction surveys to identify any stages of the Mariana eight-spot butterfly prior to the commencement of construction activities. If any life stage of the Mariana eight-spot butterfly is located within a project footprint, it will be relocated onto an appropriate host plant within similar sites away from the project footprint. In addition, DON will plant the Mariana eight-spot butterfly host plants (*P. pedunculata* and *E. calcareum*) within the forest enhancement sites and on the backside of the earthen berms of LFTRC ranges.

Conservation Measure Implementation: Surveys, salvage, and translocation of Mariana eight-sport butterflies were completed in October of 2021, completing this portion of the conservation measure.

In FY23, 2,500 Mariana Eight-Spot Butterfly host plants (1,101 *Elatostema calcareum* and 1,399 *Procris pedunculata*) were planted within CaiguatFES.

No host plants were planted on the backside of the earthen berms of Mason LFTRC as ungulate depredation is ongoing from breaches caused by Typhoon Mawar. In FY23, revegetation of P-735 Multipurpose Machine Gun Range berm was awarded; however, the contract for the revegetation of remaining berms is under negotiation and is anticipated to be awarded early FY25.

b. Guam Tree Snails [Guam fragile and humped tree snail]: Pre-construction surveys will be conducted to identify any Guam tree snail, fragile tree snail, or humped tree snail within the project footprint prior to the commencement of construction activities. If any listed snail is found, the authorized biologist will translocate the listed snail away from the project footprint and into suitable habitat.

Conservation Measure Implementation: No tree snails were translocated in FY24 as none were identified within any project footprints during the reporting period.

c. Mariana Fruit Bat: Surveys following the FWS-recommended JRM protocol will be conducted one week prior to the onset of work.

Conservation Measure Implementation: Addressed in Part I. item 2.c.

d. Listed Plant Species: Healthy listed plants located within a project footprint will be transplanted into the FES or other suitable protected areas (e.g., NWF Ungulate Control Area) prior to clearing. Transplanted plants will be maintained and monitored for a minimum of 12 months.

Conservation Measure Implementation: DON committed to a minimum of 50% survivorship of listed plants transplanted. For all species salvaged and transplanted, the DON

has continued to exceed the 50% survival rate. **Table 2** identifies the number of individuals impacted by construction (Column B) and the survival rate by species (Column C). Individuals reported are broken down by those that have been outplanted and completed maintenance/monitoring (Column E. Turned Over to MCBCB), and those still under active maintenance, whether in a nursery or outplanting site (Column F. No. Pending Turn Over to MCBCB). The twelve (12) month maintenance and monitoring period-post outplanting is integral to all MCBCB outplanting contracts to maximize survival and ensure the DON meets or exceeds the survival criteria outlined in the conservation measure. The highest MCBCB success rate thus far is the replacement of 311 *Tabernaemontana rotensis* with 890 *T. rotensis*, a 286% rate of survivorship.

Table 2. Lists the FY24 status of listed plant species salvaged from various construction project footprints. Individuals turned over to MCBCB have met the success criteria outlined in the conservation measure and completed the contractual 12-month maintenance and monitoring period. Individuals pending turn over are at varying stages of contract completion, ranging from nursery maintenance to 12 months post-transplant monitoring.

A. Listed Plant Species	B. No. of Unique Individuals Subject to Removal	C. Survival Rate in Percent (Minimum 50% Required)	D. Total Under DON Control (Column E + F)	E. No. Turned Over to MCBCB	F. No. Pending Turn Over to MCBCB
Bulbophyllum guamense	**73**	**101%**	**74**	73	1
Cycas micronesica*	**1339**	**61%**	**821**	43	778*
Dendrobium guamense	**46**	**96%**	**44**	44	0
Heritiera longipetiolata	**11**	**227%**	**25**	11	14
Tabernaemontana rotensis	**311**	**286%**	**890**	890	0
Tuberolabium guamense	**9267**	**79%**	**7312**	7312	0

** Number of Cycas micronesica pending turn over (Column F) include 65 germinated seedlings and 199 seeds in active propagation. Additionally, there are 166 seeds pending processing for propagation and not yet counted.*

3. Conservation Measures to Minimize the Effects of Construction: Addressed under the response for the July 31, 2015 Biological Opinion on the Department of the Navy's Relocation of U.S. Marine Corps from Okinawa to Guam and Associated Activities on Guam. See Part I, Paragraph 2 of this report.

4. Conservation Measures to Minimize the Effects of Invasive Species: Addressed under the response for the July 31, 2015 Biological Opinion on the Department of the Navy's Relocation of U.S. Marine Corps from Okinawa to Guam and Associated Activities on Guam. See Part I, Paragraph 3 of this report.

5. Conservation Measures to Minimize the Effects of Fire: Addressed under the response for the July 31, 2015 Biological Opinion on the Department of the Navy's Relocation of U.S. Marine Corps from Okinawa to Guam and Associated Activities on Guam. See Part I, Paragraph 4 of this report.

6. Conservation Measures to Minimize the Effects of Training

a. & b. Addressed in Part IV.

c. Designated No Wildlife Disturbance Areas: To date there has been no Marine Corps specific training at Naval Base Guam Munitions Site. The DON will ensure that military training units work in close coordination with JRM Mariana Islands Training and Testing area managers to clearly define authorized training restrictions, and where appropriate, designate No Wildlife Disturbance (NWD) areas or other designations to prohibit training in sensitive sites. The DON will work closely with DON biologists to identify new areas appropriate for designation as 'No Wildlife Disturbance' consistent with USMC combat readiness and training requirements.

7. Terms and Conditions:

a. T&C 1 – Implementation of Conservation Measures: Addressed in Parts I and II of this report.

b. T&C 2 – Minimization of the level of incidental take of the Mariana fruit bat, Mariana eight-spot butterfly, Guam tree snail, humped tree snail, and fragile tree snail:

T&C Implementation: [2.a] In FY24, MCBCB staff conducted fruit bat surveys prior to vegetation clearing for the P-187 Multi-Species Barrier project. No fruit bats were observed during either morning or evening survey; therefore, no construction was halted in FY24 due to the presence of a Mariana fruit bat within 492 ft (150m) of a construction site.

[2.b] Hooded lighting is being planned for actions within 492 ft (150 m) of all potential Mariana fruit bat roost habitat. Hooded lights have been installed at four of the five ranges within the LFTRC. The fifth range (Multipurpose Machine Gun Range; MPMG) is still under construction.

[2.c] Educational materials regarding Mariana fruit bat appearance, behavior, and biology have been provided to all pertinent DON personnel so that they can correctly identify any Mariana fruit bats near or within the action construction and operation area.

[2.d] There have been no changes to noise contour as it relates to the action; and, to date, no Mariana fruit bat habitat has been subjected to increased noise levels from aircraft operations. Quarterly fruit bat monitoring for maternity colonies began in FY23 to survey occurrence in areas of concern one year prior to full range and aircraft operations anticipated in calendar year 2025. No maternity colonies were observed in FY24 for LFTRC and aircraft noise-affected areas.

[2.e] There have been no changes to noise contour as it relates to the action; and, to date, no Mariana fruit bat habitat has been subjected to increased noise levels from aircraft operations. Quarterly fruit bat monitoring for roosting sites began in FY23 to functionally

capture fruit bat occurrence in areas of concern one year prior to full range and aircraft operations anticipated in calendar year 2025. No roosting sites were observed in FY24 for LFTRC and aircraft noise-affected areas.

[2.f] Noise study at GNWR: The MPMG range at Mason LFTRC is still under construction; therefore, operations have not started, and no noise studies at the Guam National Wildlife Refuge and Ritidian Point have been initiated.

[2.g] Snail surveys at Andersen South (now MCBCB Urban Training Complex) were completed in 2020.

[2.h] Conduct a biological survey, no less than annually, for the purpose of evaluating the use of sites where host plants with life stages of the Mariana eight spot butterfly (e.g., eggs, caterpillar, and chrysalis) were relocated onto an appropriate host plant (e.g., relocate pre-diapause larvae to *Procris pedunculata* or *Elatostema calcareum*) away from the project footprint.

A cooperative agreement for evaluating the use of host plants where the Mariana Eight Spot butterflies were relocated in Mason LFTRC was awarded in FY23 and is ongoing through FY28.

c. T&C 3 – LFTRC Fence: DON shall complete the NWF Ungulate Control Fence within two years of awarding a contract for construction of the portion of the LFTRC that removes the existing Ritidian Ungulate Fence.

T&C Implementation: At the Mason LFTRC (formerly referred to as NWF), 4.1 miles of ungulate fence installation was completed in March 2022, completing the fencing identified in the conservation measure and term and condition.

Immediately after Typhoon Mawar, an assessment of LFTRC ungulate fencing was conducted. The contract for fence repair and replacement was awarded in FY23. Enclosed "pockets" of net fencing have been re-established and eradication is proceeding at Mason LFTRC with anticipated completion in FY25.

d. T&C 4 – NWF Ungulate Control: NWF Ungulate Control: DON shall remove all ungulates from the NWF Ungulate Control Area within six months after completing the NWF ungulate fence. The NWF area in the BO subject to ungulate control is now referred to as MCBCB Mason LFTRC.

T&C Implementation: The DON committed to removing all ungulates from the ungulate control area within six months after completing the ungulate fence; however, eradication has taken longer than anticipated due to factors such as site cleanup and construction-associated emergency explosive demolition activity, range activation operations, and recovery work from the catastrophic impacts of Typhoon Mawar.

Mason LFTRC ungulate fencing and temporary ungulate exclusion netting also sustained typhoon damage and as a result, re-eradication is required within Mason LFTRC. A contract for re-eradication was awarded and work is ongoing with anticipated completion in FY25.

e. T&C 5 – Take Monitoring Plan (TMP):

T&C Implementation**:** DON completed the Take Monitoring Plan on September 19, 2017.

To date, 71 acres of snail surrogate habitat have been cleared out of the 212 acres anticipated to be impacted, 742 acres of bat surrogate habitat have been cleared out of 2,136 acres anticipated to be impacts, and 165 acres of butterfly surrogate habitat have been cleared out of 338 acres anticipated to be impacted under the incidental take statement. It is anticipated that no further vegetation clearing of snail and butterfly surrogate habitat is required to complete the proposed action, which represents a significant reduction from planned removal estimates. The amount of snail surrogate habitat cleared was previously reported as an estimate of 166 acres based on project completion percentage. MCBCB has since accurately taken GPS data of the actual habitat vegetation cleared by construction activities.

PART III: BIOLOGICAL OPINION 01EPIF00-2016-F-0185 OF OCTOBER 30, 2018 (2018 BO AMENDMENT)

1. General Conservation Measures to Contribute to the Recovery of Listed Plants
Addressed in Part II.1.a.

2. Pre-construction Surveys, General Listed Plant Salvage and Translocation
Addressed in Part II.1.b. The letter dated June 24, 2020 from FWS acknowledged that Section 10(a)(1)(A) permits are not required to implement the conservation measure. The Department of Interior (DOI) Solicitor clarified the definition of "remove and reduce to possession" of federally listed plants and indicated that because none of the translocations in support of the DON actions would reduce a plant to possession, none of the translocations would violate § 9(a)(2)(B) of the ESA.

3. Native Plant Nursery
Addressed in Part II.1.c.

4. Authorized Biologist Qualifications and Translocation Authorization Process
Addressed in Part II.1.d.

5. Annual Reporting of Conservation Measures
Addressed in Part II.1.e.

6. Avoidance of Listed Orchid Species in a Small Location of Finegayan
Addressed in II.1.f.

7. Forest Enhancement Sites, Ungulate Eradication Areas, and BTS Exclusion Fences:
Addressed in Part II.1.i

PART IV. CONSERVATION MEASURES FROM SEPARATE INFORMAL CONSULTATIONS:

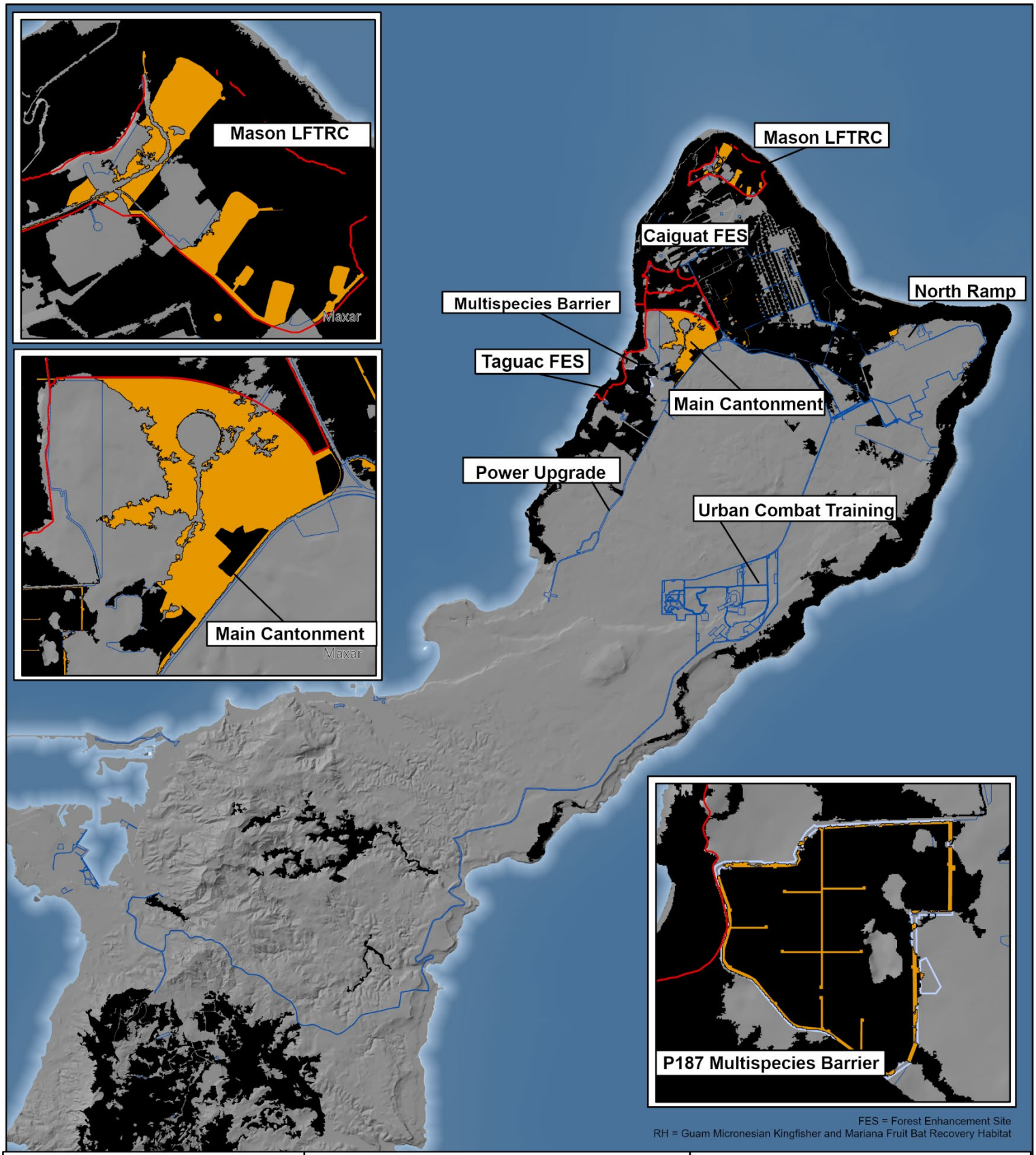
1. Sea Turtle Lighting Installation, Public Outreach and Coordination and Mariana Swiftlet Aviation and Ground Training in Naval Munitions Site (NMS): This reporting requirement not applicable for Mariana swiftlets and sea turtles as these species were addressed through informal consultation. Refer to FWS letter of March 27, 2020. The conservation measures identified by the DON will be implemented as stated in the informal consultation.

APPENDIX I: ON-GOING OR INITIATED CONSTRUCTION PROJECTS

The following list includes construction projects in support of the proposed action located at Marine Corps Base Camp Blaz (MCBCB) main cantonment, Andersen Air Force Base (AAFB), MCBCB Mason LFTRC (formerly Northwest Field), MCBCB Skaggs Urban Training Complex (UTC; formerly Andersen South), and Naval Base Guam (NBG) that were ongoing or initiated in FY24.

1) H-279/280/282 AAFB Housing Phases 1-3
2) H-366/283/375 AAFB Housing Phases 4-6
3) J-001B Finegayan Utilities and Site Improvements Phase I
4) J-008 Fire Station
5) J-011 Base Administrative Bldg.
6) J-014 Physical Training Complex
7) J-015 Dining Facility
8) J-017 I & III Area Distribution Nodes (ADNs)
9) J-017 II Main and Commercial Gate
10) J-018 Police Station
11) J-023 Bachelor Officer's Quarters (BOQ) A
12) J-025 Medical Dental Clinic
13) J-031/033 Bachelor Enlisted Quarters (BEQ) D and F
14) J-032/036/037/038/039 (BEQ "5-plex")
15) J-032-1 MCBCB Shared Parking Lot
16) J-034 BOQ B
17) J-035 Education Center
18) J-301 Consolidated Headquarters
19) J-313 Corrosion Control
20) J-318 Public Works/Maintenance Shop
21) J-323 Base Motor Pool
22) J-609 Apra Embarkation Facility
23) J-755 Urban Training Complex (UTC)
24) P-103 Water Wells
25) P-187 Brown Tree Snake (BTS) Exclusion Barrier South
26) P-270 Air Combat Element (ACE) Gym and Dining Facilities
27) P-280 Aviation Admin Bldg.
28) P-290 Earth Covered Magazine (MSA)
29) P-296 Ordinance Admin
30) P-305 4th Marine Regiment Facilities
31) P-306 CLB-4 Facilities
32) P-307 Consolidate Armory
33) P-309 Ground Combat Element – Infantry Battalion 1&2 Facilities
34) P-310 Infantry Battalion Company Headquarters
35) P-311 Fuel Station
36) P-312/804 Distribution Warehouse/Central Issue Facility
37) P-314 Marine Expedition Brigade (MEB) Enablers
38) P-317 Consolidated Explosive Ordinance Disposal (EOD) Compound
39) P-325 9th ESB Equipment and Maintenance Facility
40) P-326 PEI Warehouse
41) P-406 Recreation Center
42) P-415 Child Development Center
43) P-459 BEQ
44) P-459B MCBCB Shared Parking Lot
45) P-715 Known Distance (KD) Ranges (KD Rifle Range, KD Pistol Range, Modified Record of Fire Range and Non-Standard Small Arms Range)
46) P-735 Machine Gun Range (including UXO 4A Area)
47) P-802 Base Warehouse
48) P-803 Individual Combat Skills Training
49) P-871U Chemical, Biological, Radiological, Nuclear, and Explosives (CBRNE) Training Facility

END OF REPORT



FES = Forest Enhancement Site
RH = Guam Micronesian Kingfisher and Mariana Fruit Bat Recovery Habitat

Legend

- Ungulate Fence Alignment
- Clearing in GMK-MFB RH (742 ac)
- GMK-MFB Recovery Habitat
- Proposed Action
- P187 Greenbox

Proposed Action	Actual Area w/in RH Cleared
1031 ac	742ac

Enclosure (1)

ATTACHMENT 1

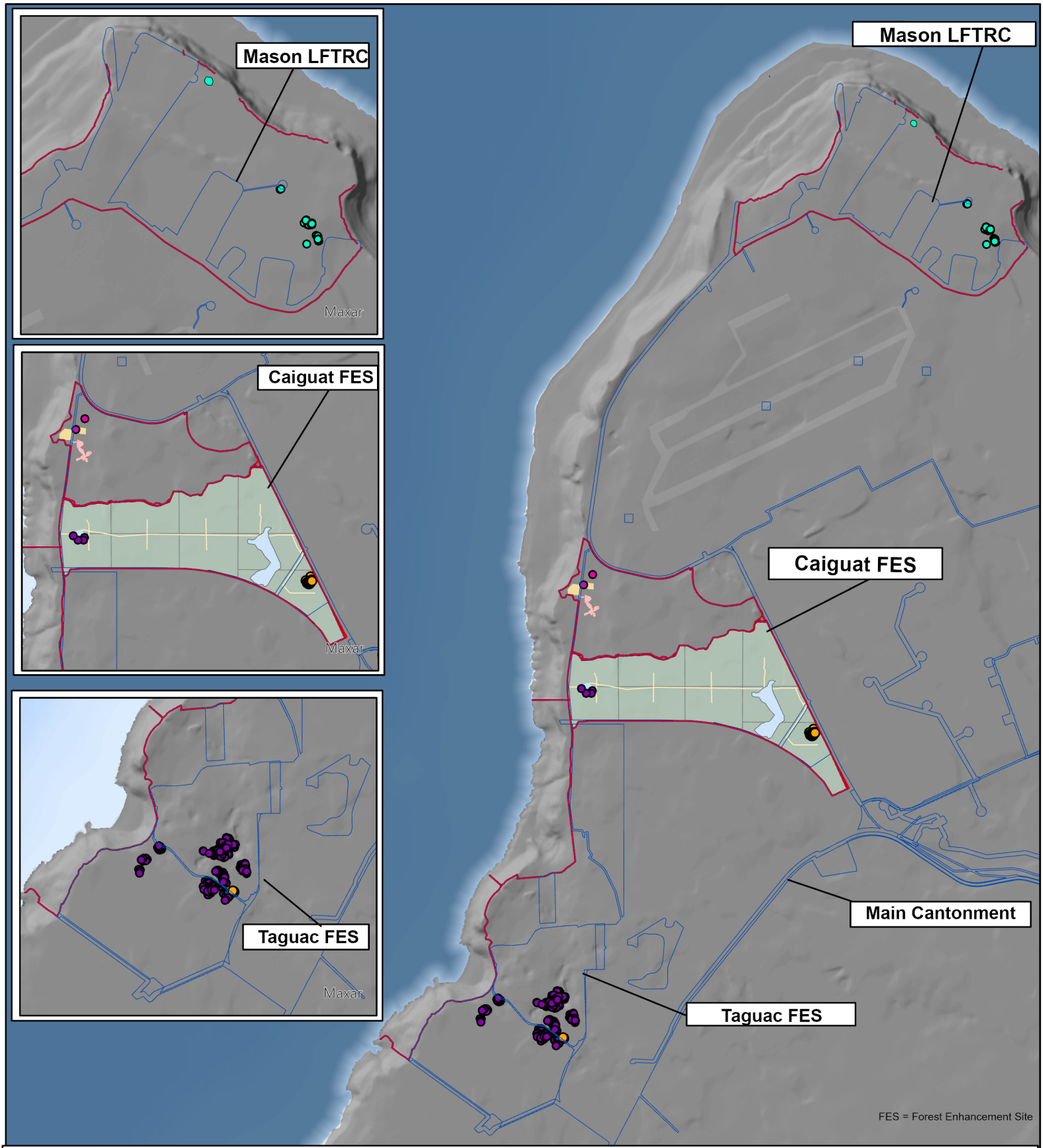
Construction Projects Completed, On-going or Initiated in FY24

N

0 1,0002,000 4,000 m

0 3,500 7,000 14,000 ft

Map Date: 05 December 2024
Coordinate System: WGS 1984 UTM 55N



Legend

- Mariana eight-spot translocation Area
- T.rotensis and H. longipetiolata Outplanting Area (active)
- C. micronesica Outplanting Area (active)
- S. nelsonii Outplanting Area (active)
- Phase I Blocks
- Access Pathway and Irrigation Lines
- Proposed Action
- Ungulate Fence Alignment
- Transplanted Cycads
- Transplanted Orchids
- Mariana eight-spot translocation
- Transplanted Butterfly Host Plants

ATTACHMENT 2

FES, Salvage, Transplantation, and Translocation Projects

N

0 410 820 1,640 m

0 0.2 0.4 0.8 mi

Map Date: 17 September 2024

Coordinate System: WGS 1984 UTM Zone 55 N

ENCLOSURE (1)