



Forest Health

2025 highlights

○ PACIFIC ISLANDS

○ APRIL 2026

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Forest Resources

The United States Affiliated Islands of the western Pacific span an area larger than the continental United States, with a total land mass of 965 square miles. The area includes the Territories of American Samoa and Guam, the states of Chuuk, Kosrae, Pohnpei, and Yap in the Federated States of Micronesia (FSM), the Republic of Palau, the Republic of the Marshall Islands (RMI), and the Commonwealth of the Northern Mariana Islands (CNMI). Approximately 325,000 acres are forested.

Forests in the Pacific are host to a variety of insects and pathogens and are subject to natural and human-caused disturbances which adversely affect forest health. Forest health issues vary widely among islands, and most pest issues result from introductions via multiple pathways due to the increase in travel and trade throughout the Pacific.

Invasive plants remain one of the greatest forest health issues on the islands, most of which have active invasive plant survey and control programs. Invasive insect introductions are becoming more frequent, increasing the need for early detection and novel integrated pest management tools.

Coconut rhinoceros beetle (CRB)

Oryctes rhinoceros

Republic of the Marshall Islands

Since the first detection of CRB on Majuro atoll in 2023, the Ministry of Natural Resources and Commerce (MoNRC), Quarantine Division, has continued to conduct ground surveys, dispose of CRB breeding material, and maintain monitoring traps to contain the infestation on Majuro and strengthen national biosecurity systems to protect neighboring and outer islands. This work has been executed by a dedicated CRB Response Team led by a CRB Coordinator and technician funded by the USDA Forest Service.

In 2025, weekly pheromone trapping continued across Majuro and data were recorded on the EpiCollect platform. A total of 6,148 individuals were captured and destroyed this year, and pheromone panel traps were the most effective trap used. Daily green waste sanitation occurred in the zone of infestation in Ajeltake Village where 215 confirmed breeding sites were destroyed this year. No additional CRB populations have been identified outside of Ajeltake.

Efforts were also made to exclude CRB from the outer islands of RMI. Updated aircraft and sea vessel Stan-



Figure 1. Larval coconut rhinoceros beetles collected from breeding sites in Ajeltake, Majuro Atoll, RMI. Photo credit: Silver Wase, MoNRC, Division of Quarantine.



Figure 2. Dying coconut palm tree being cut for disposal in Ajeltake, Majuro Atoll, RMI. Photo credit: Silver Wase, MoNRC, Division of Quarantine.

dard Operating Procedures were implemented this year with strict inspection and clearance of organic material prior to shipment. Movement of coconut debris has also been restricted and enforced in collaboration with local authorities. No CRB were detected at ports this year.

A nation-wide awareness and outreach program was implemented, consisting of educational programs at schools and communities and radio outreach through V7AB requesting public vigilance and reporting to the MoRNC.

Guam

The University of Guam (UOG) continues to implement an integrated pest management strategy to reduce the risk of coconut rhinoceros beetle spread from Guam to the broader Micronesian region through targeted interdiction, surveillance, and population suppression on ~1,400 acres at Guam's public ports of entry. During the reporting period, CRB detector dog teams conducted routine outbound cargo inspections across airport and seaport facilities, screening over 2,300 palletized items and numerous vehicles destined for CRB-free islands, with multiple confirmed detections demonstrating program effectiveness.

On November 19, 2025, the detector dog teams found a record-high of five CRB adults (3 female, 2 male) in cargo staged for export to surrounding islands at Micronesian Air Cargo's facilities. A network of 131 pheromone panel traps remained operational at the Guam International Airport and Port Authority, contributing to the long-term removal of tens of thousands of adult beetles from the breeding population and providing seasonal population data that guides management decisions. For example, integrated treatments combining a green muscardine fungus biocontrol agent at artificial breeding sites and targeted pesticide tree injections continue to suppress CRB populations and reduce feeding damage on coconut palms despite a population surge fueled by increased breeding site material produced by typhoon Mawar. Preparatory work was also completed to initiate population genetics and viral biocontrol (OrNV) surveillance through whole-genome sequencing and improving understanding of new CRB lineages entering Guam. Despite operational delays caused by staffing turnover, program activities resumed with USDA-validated canine teams, biological and chemical control, and continued damage monitoring efforts. These have demonstrated sustained progress toward reducing pest pressure at Guam's high-risk transportation hubs and protecting forest and agricultural resources across the Pacific region.

Cycad Aulacaspis Scale (CAS)

Aulacaspis yatsumatsui

Cycad aulacaspis scale is widespread throughout Micronesia and is a significant threat to the endemic Micronesian cycad (*Cycas micronesica*), locally known as fadang. The Fadang Working Group continued to meet monthly to discuss CAS management and monitoring in Micronesia.

Fadang was recently confirmed on the island of Alamagan in the Northern Mariana Islands, where historical reports had suggested fadang once occurred. This year, a single young fadang tree was found on the island's west side by Henry Fandel (Division of Fish and Wildlife, Department of Lands and Natural Resources, Commonwealth of the Northern Mariana Islands).

Pat Griffith (Montgomery Botanical Center) and Ben Deloso (International Center of Tropical Botany, Florida International University) have continued their genetic research on fadang. To date, they have examined material from three islands: Guam, Rota (CNMI), and Tinian (CNMI). Their findings suggest that the fadang population on Tinian may have originated in Guam.



Figure 3 (top). Black panel traps baited with coconut rhinoceros beetle lures for monitoring adult CRB presence in Majuro Atoll, RMI. Figure 4 (bottom). MoNRC staff and community members involved in a community consultation that was conducted in Wotje, one of the outer islands, after the mayor and community members called and reported possible signs of CRB infestation.

Photo credits: Silver Wase, MoNRC, Division of Quarantine



Figure 5. Coconut rhinoceros beetle detection dog training for CRB scent detection. Photo credit: Glenn Dulla, University of Guam



Figure 6. Cycad on Alamagon Island in the Northern Mariana Islands. Photo Credit: Henry Fandel, CNMI Department of Lands and Natural Resources, Division of Fish and Wildlife



Figures 7 and 8. (top) Fadang Working Group members conducting surveys and monitoring for CAS and (bottom) examining cycad trees for CAS, Guam National Wildlife Refuge. Photo Credits: Mike Richardson, U.S. Department of Fish and Wildlife, Invasive Species Team

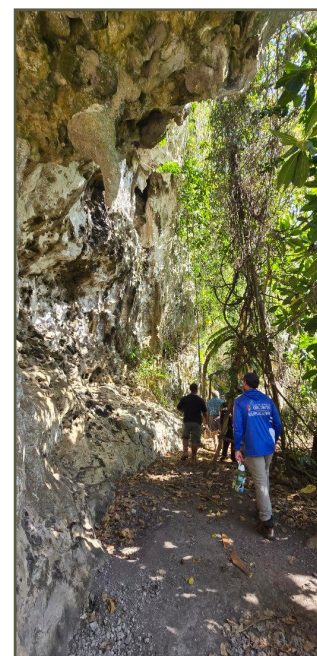


Figure 9. Fadang Working Group members surveying and monitoring for CAS at the Guam National Wildlife Refuge. Photo Credit: Mike Richardson, U.S. Department of Fish and Wildlife, Invasive Species Team

Ronald Cave (University of Florida, Institute of Food and Agricultural Sciences, Indian River Research and Education Center), also conducted fieldwork on Guam, Rota, and Tinian, collecting predators from different fadang populations. Several of these predators represent new records for the Mariana Islands.

The University of Guam (UOG) recently hired a new extension entomologist, Daniel Johnson, to replace Aubrey Moore. Johnson has already identified several previously unrecorded insects associated with fadang, including parasitic species and four ant species that tend to cycad blue butterfly (*Luthrodes pandava*) caterpillars.

In the fall of 2024, the Fadang Working Group completed a guidance document on “Cycad Pest Factors and Health Parameters”. This guide standardizes data collection methods for all researchers and land managers, ensuring consistency and comparability of data. This effort took several months and was spearheaded by Ken Puliafico (Center for Environmental Management of Military Lands (CEMML), Colorado State University).

Additionally, a best management practices document was developed to help prevent the spread of cycad scale among fadang populations.

In 2025, the CNMI Department of Lands and Natural Resources hired a new botanist, Alix Kosmala, who has expanded knowledge of fadang populations on Rota. Under her guidance, an additional 2-4 populations of fadang have been located on the island.

Jon ‘Kawika’ Davis, Sam Sosa, and other Guam National Wildlife Refuge staff have continued survey and monitoring of fadang on the Guam National Wildlife Refuge. They have confirmed the locations of over 1,000 fadang and created a monitoring program using randomly selected plants. These plants are now being photographed and tracked according to the standardized plant health parameters guidance and for the presence of scale abundance and scale predators.

Staff from the Center for Environmental Management of Military Lands have continued monthly monitoring and treatment of more than 700 fadang plants on Tinian. Each plant is inspected, measured, and treated as needed for cycad aulacaspis scale or cycad blue butterfly. Feral cattle that were released or escaped following Typhoon Mawar have caused further damage to these cycad plants. Management options for these cattle are limited due to the potential presence of unexploded ordnances in the area.

James McConnell and his lab at UOG have continued research on fadang growth and response to cycad blue butterfly and cycad scale feeding. They have established monitoring plots on Andersen Air Force Base to support these studies.

Little Fire Ant (LFA) *Wasmannia auropunctata*

Guam

Little Fire Ants have been detected at two critical locations in Guam, requiring coordinated management efforts to contain their spread and protect both public safety and local ecosystems.

Discovery of Little Fire Ant at Masso Reservoir

Little Fire Ants were identified at Masso Reservoir Nature Park in Piti (October 2024) and active management efforts began in April 2025. The initial detection resulted from a survey conducted near an illegal green waste dumping site located within the property. This discovery is sig-



Figure 10. Volunteer sprays an insecticide mix using Tango™ to control little fire ants on green waste material illegally dumped on the Masso Reservoir property. Photo Credit: Chris Rosario, Guam Department of Agriculture



Figure 11. Little fire ants collecting bait consisting of peanut butter and the insecticide, Tango™, which is then taken back to the nest and fed to the queen ant. Photo Credit: Chris Rosario, Guam Department of Agriculture

nificant because invasive LFA populations pose a threat to the public and forested environment on the nature reserve. Shortly after surveys were conducted, the site was immediately treated with fire ant bait. A long-term treatment plan has been implemented to prevent further spread of the infestation across the Masso Reservoir property.

Agana Paseo Property Management

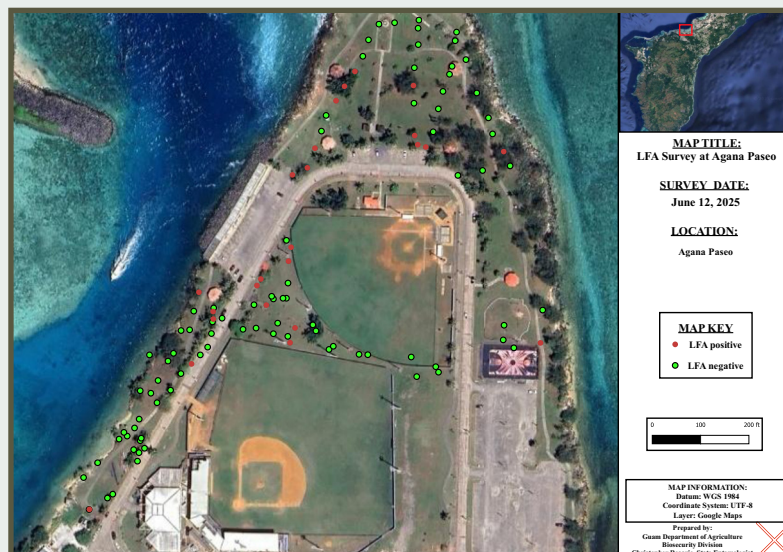
A second LFA population was identified adjacent to Agana Paseo Park, near the Agana boat basin. This discovery was made through surveys coordinated between the U.S. Fish and Wildlife Service and the Guam Department of Agriculture. While LFA presence in this area dates to 2018, the recent detection indicates the need for ongoing surveillance to monitor for potential re-infestation of the site. A treatment plan is currently in development to address the existing infestation and mitigate the spread to nearby areas, particularly the Agana Boat Basin. Site management remains challenging due to high public traffic and persistent littering which both complicate eradication and control efforts.

Commonwealth of the Northern Mariana Islands (CNMI)

Following the two detections of LFA on shipments to CNMI in 2025, an extensive early detection effort was launched to protect the islands from LFA establishment. A total of 555 traps were deployed at critical ports of entry, with 525 traps in Saipan at AirMac, United Cargo, and Saipan Commuter and 30 traps in Rota at West Point Marina and the Rota Airport.

Black Mangrove Seed Infestation Micromoth Damage in *Lumnitzera littorea*

In Guam's marine preserves, the native mangrove tree *Lumnitzera littorea* (black mangrove or ngānga' in Chamoru) plays a vital ecological role by stabilizing coastlines, storing carbon, and providing nursery habitat for aquatic species. However, unusually low germination rates raised concern among conservation partners, particularly as mangrove restoration and out-planting efforts expand across Guam.



Figures 12 and 13. Maps of the Masso Reservoir property (top) and Agana Paseo Park (bottom) showing the presence of little fire ant (in red dots). Map Credits: Chris Rosario, Guam Department of Agriculture



Figure 14. Unidentified adult micromoth affecting black mangrove in Guam. Photo credit: Daniel Johnson, University of Guam



Figure 15. Unidentified larval micromoth feeding on seed of black mangrove. Photo credit: Glenn Dulla, University of Guam College



Figure 16. Black mangrove flowers. Photo credit: Glenn Dulla, University of Guam

Initial observations suggested a potential biological driver behind seed failure. Similar cases reported in Southeast Asia linked seed mortality to micromoth infestations, prompting researchers from the University of Guam agInnovation Research Center and the Guam Coral Reef Initiative to investigate whether a comparable pest pressure existed locally. Field surveys conducted throughout Sasa Bay and Sumay (Apra Harbor area) NAVFAC restoration plots documented widespread evidence of seed damage, including insect frass, larval galleries, and pupal chambers inside developing seeds.

Successfully reared adult moths from field collected seeds were sent for taxonomic assessment at the USDA Systematic Entomology Laboratory. Morphological analysis conducted by USDA entomologist Jim D. Young indicated that the insect belongs to a group of micromoths likely within the *Gelechiidae* family. Genital morphology suggested similarities with the genera *Leptozestis* or *Trachydora* — taxa not previously documented in Guam. This finding represents the first known record of this pest-host interaction in the Pacific Islands and signals a potentially emerging mangrove biosecurity issue.

Seed infestation rates up to 99% were observed among individual trees, significantly reducing seed viability and posing a serious risk to natural mangrove regeneration. Because *L. littorea* populations in Guam are already limited in distribution, sustained pest pressure could hinder long-term recruitment and reduce the resilience of coastal ecosystems.

The implications extend beyond ecological conservation. Mangrove forests support local fisheries, buffer shorelines from erosion, and play a key role in blue-carbon initiatives. Reduced seed viability threatens restoration efforts led by federal and local agencies and may affect climate-resilience planning tied to coastal protection.

Citrus blackfly

Aleurocanthus woglumi

Republic of the Marshall Islands

Citrus trees in the RMI continue to be impacted by heavy infestations of citrus blackfly, *Aleurocanthus woglumi*. Citrus blackfly is native to Southeast Asia and has a wide host range that includes citrus and other urban forest and agroforestry plants. The RMI Ministry of Natural Resources and Commerce (MoNRC), Quarantine Division, continued insecticide trials for the second year on Majuro to control citrus blackfly infestations on individual citrus trees.

Mango stem borer

Batocera rufomaculata

Commonwealth of the Northern Mariana Islands

The mango stem borer was found on the island of Saipan in the CNMI. The mango stem borer is a longhorn beetle (Family: *Cerambycidae*) pest of mango (*Mangifera indica*) trees. Forest Health Technician, Dustin Kaipat, assisted in the response. He confirmed that this beetle tunnels through fruit to reach the seed of guava (*Psidium guajava*) and breadfruit (*Artocarpus altilis*) in addition to mangoes.



Figure 17. Black mangrove flower in cross section showing feeding damage, frass, and exit hole of a larval micromoth. Photo credit: Glenn Dulla, University of Guam



Figure 18. Native mangrove forest in a marine preserve on Guam Photo credit: Cara Lin, Guam Department of Agriculture, Coral Reef Initiative



Figure 19. Landscape in Aimeliik state displaying pockets of udeuid mortality. Note the invasive species *Merremia peltata* overtopping trees in the foreground. Photo credit: Jason Johnson, Ebiil Society



Figure 20. Forest Inventory and Analysis crew, including DFLW foresters and PAN rangers inventorying a plot in Aimeliik State. Photo credit: Jason Johnson, Ebiil Society

Wilt of *Manilkara udoido* *Ceratocystis* sp.

Palau

The epidemic that has been killing endemic udeuid (*Manilkara udoido*) trees in Palau continued in 2025. Forest health work in Palau has confirmed that the fungal pathogen *Ceratocystis manginecans* is the cause of Udeuid Wilt affecting the native udeuid tree, as documented in the publication "[First Report of *Ceratocystis manginecans* Causing Udeuid \(*Manilkara udoido*\) Wilt in Palau](#)", published on September 26, 2025. Inoculation experiments to complete Koch's postulates were performed at the Palau Division of Forest, Land, and Water Management (DFLW) nursery in Nekken, using *C. manginecans* strains collected from the forests of Babeldaob. Genetic sequencing, morphological investigations, and analysis were performed by scientists from the Forest Service and Iowa State University working closely with the DFLW.

DFLW, Ebiil Society, and the Forest service teamed up to gather more information on udeuid in the forest and the progress and impact of the disease. Forest inventory data and long-term monitoring plots revealed highly variable impacts across sites, ranging from healthy stands to near-complete loss. Significant populations of Udeuid were discovered growing in the northern states of Ngeremlengui, Ngardmau, and Ngiwal, with a confirmed disease center in Ngeremlengui. Ongoing surveys have raised concern about potential spread to other tree species as *C. manginecans* has a broad and unpredictable host range and may interact with wood-boring insects. DFLW staffing losses among forestry technicians and foresters have been a challenge, reducing capacity for sustained forest health work.

During this period, DFLW was also developing a proposal for an Infrastructure Investment and Jobs Act (IIJA) funding opportunity to further initiatives addressing the udeuid die-off, with a focus on strengthening collaboration among local, national, and external partner agencies. In 2025, informational presentations and training on recognizing and managing udeuid wilt were provided to Forest Inventory and Analysis (FIA) crews, the Palau Inter-Island Biosecurity Workshop, Hawai'i Conservation Conference, Ebiil Society Forestry Field School, and Palau Conservation Consortium. The partners have also worked together to improve propagation of Udeuid for restoration purposes and have developed protocols for working in Udeuid Wilt areas and a Udeuid Wilt FAQ sheet.



Figure 21. Udeuid seedling showing wilt symptoms three weeks after inoculation with *Ceratocystis manginecans*. Photo credit: Jason Johnson, Ebiil Society



Figure 22. Ebiil Society Forestry Technician VanRay Tadeo observes evidence of cankering and ambrosia beetle attacks on a wilted udeuid tree found in the northern State of Ngeremlengui. Photo credit: Jason Johnson, Ebiil Society



Figure 23. Flat with several udeuid seedlings from a seed trial at Ebiil Society nursery. Photo credit: Jason Johnson, Ebiil Society)



Figure 24. Forest Health Specialist Uiki Isaako applying Milestone to the Pulumamoe invasive tree in the Malota project site Photo credit: DJ Sene, American Samoa Community College



Figure 25. GIS Specialist Neil Gurr assisting the Forestry Program in controlling the Tamaligi palagi invasive tree using the girdling technique. Photo credit: DJ Sene, American Samoa Community College

American Samoa

Invasive trees such as African tulip (*Spathodea campanulate*), Tamaligi palagi (*Falcataria moluccana*), and Pulumamoe (*Castilla elastica*) are still priority concerns for American Samoa. More than 1,200 seedlings, 800 saplings, and 300 trees of these invasive species were controlled at three different project sites, totaling to more than 15 acres of forest management activity. Methods of control consist of girdling or hacking and spraying trees utilizing Milestone herbicide. Under the IJA, the Forestry Program has also been controlling Fue lautele (*Merremia peltate*) vines across two different project sites. These vines are becoming more invasive across the island's montane forests, smothering native forest ecosystems and becoming a major eyesore for island visitors and residents. With the assistance of student interns, the Forestry Program controlled more than 12 acres of Fue Lautele and planted 19 native trees to restore these forested areas. The program will continue to control these invasive trees and vines in the upcoming years utilizing manual removal and heavy monitoring efforts. Additional funding is needed to assist with these efforts and to ensure American Samoa's forests remain healthy and intact.



Figure 26. Forestry Program student interns removing the Fue lautele vine from the Nu'uuli project site. Photo credit: DJ Sene, American Samoa Community College

Commonwealth of the Northern Mariana Islands

CNMI Forestry conducted comprehensive forest health surveys across both the northern and southern parts of Saipan. Rather than focusing on a single species, the team established a wide-ranging inventory of various invasive plants and vines to better understand their distribution and impact on the island's ecosystem. During these surveys, a new population of *Flagellaria indica*, a perennial climbing plant, was found on Wireless Ridge. Efforts will be made to monitor its impact on forest health and wildfires.

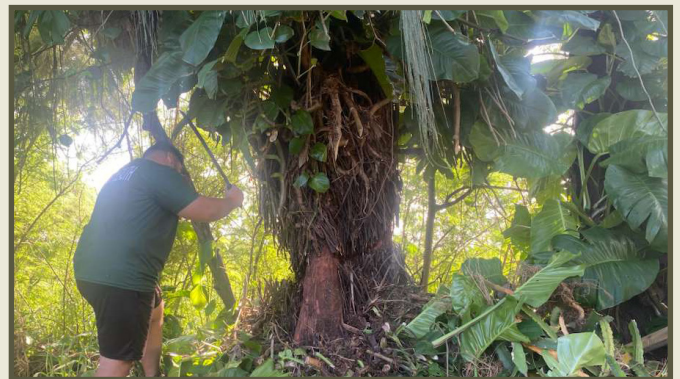


Figure 27. Forest Health Technician Dustin Kaipat removing Devil's Ivy, an invasive root vine in CNMI, from a Native tree at Kagman Farm Plot in Saipan. Photo Credit: Michelle Sablan-Togawa, Department of Lands and Natural Resources



Figures 28 and 29. Survey photos (left) of *Flagellaria indica* foliage, and (right) *Flagellaria indica* growing in the understory amongst native plants, Wireless ridge Capitol, Saipan. Photo Credit: Dustin Kaipat, Department of Lands and Natural Resources



Figure 30. Volunteers removing *Mikania micrantha* on a nature walking trail at Guam National Wildlife Refuge. Photo Credit: Hannah Cepeda, U.S. Fish and Wildlife Service

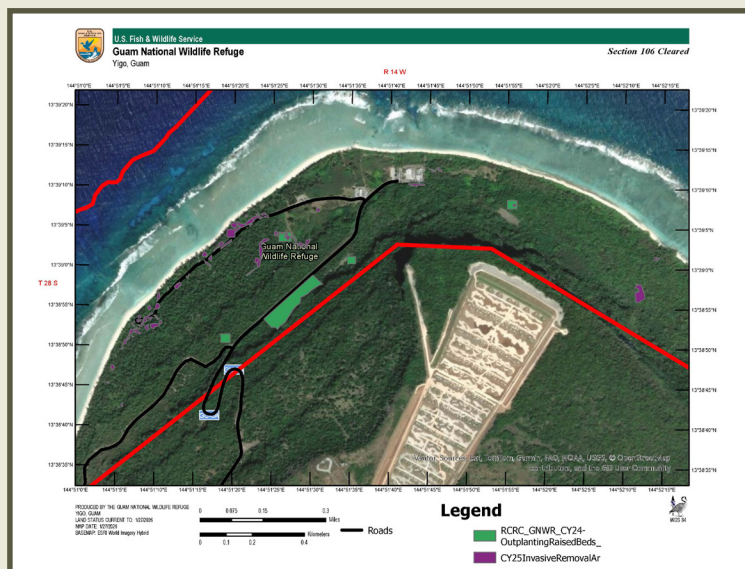


Figure 31. Map showing approximately 8 acres where *Mikania micrantha* was removed (shown in purple on map) from Guam National Wildlife Refuge. Map Credit: Samuel Sosa, U.S. Fish and Wildlife Service

Guam

In May 2023, Typhoon Mawar hit the island of Guam. This caused major damage to the canopy of the forest, especially at the Guam National Wildlife Refuge (GNWR) located in the most northern part of the island. Due to the damaged trees, the loss of canopy cover from the forest introduced more light intensity in these areas, which made it possible for the invasive vine, *Mikania micrantha* or also known as bitter vine or mile-a-minute vine to establish its presence in these now fully sunlit areas. It has taken over a large area of forest within GNWR. With the help of KUPU members and volunteers (Figure 30) approximately eight acres of *M. micrantha* were removed by hand pulling from GNWR forested areas near nature trails and out planting areas (Figure 31). Figures 32 and 33 are before and after pictures of removing *M. micrantha*. After removing *M. micrantha* we plan to out plant native trees to fill those canopy gaps to shade those areas to suppress *M. micrantha* recruitment.



Figures 32 and 33. Before (left) and after (right) picture of an area in Guam National Wildlife Refuge where *Mikania micrantha* vines were removed. Photo Credits: Matt Reardon, U.S. Fish and Wildlife Service

Infrastructure Investment and Jobs Act Invasive Species Project Micronesian Regional Identification Network

The UOG continues development of the Micronesian Regional Identification Network, a pilot initiative supporting forest health and invasive species response across Pacific islands. The project focuses on strengthening rapid detection and identification of pests and pathogens through microscopy imaging and digital diagnostics. Limited regional taxonomic capacity often delays response to new forest pests and invasive species. This initiative builds local capability by establishing a centralized imaging hub at UOG and expanding training opportunities for biosecurity personnel and students.

During the reporting period, project staff conducted a regional needs assessment to evaluate diagnostic capacity and imaging proficiency among partner agencies. Thus far, the biosecurity programs of American Samoa, Palau, Chuuk, and the Republic of the Marshall Islands along with the Guam Department of Agriculture Forest Health Program expressed interest in participating in future training and equipment deployment. Concurrently, microscopy imaging curriculum is in development and projected to be integrated into UOG Agriculture and Life Sciences courses, including entomology and plant pathology laboratories. This will support workforce development tied to biosecurity and forest health monitoring.

Kosrae Invasive Species Taskforce Strategic Action Plan (KIST-SAP)

One goal for the Kosrae Invasive Species Taskforce (KIST) was to update the Kosrae Invasive Species Taskforce Strategic Action Plan (KIST-SAP). The KIST-SAP was designed with the primary goal of reducing threats of invasive species in Kosrae by outlining state-wide invasive pest management strategies, including prevention and early detection, control, eradication, and emergency response plans. With support from GEF-6, KIST was able to re-organize and conduct several meetings over the course of 2025 to review and update the SAP. The updated KIST-SAP is currently awaiting endorsement from the Kosrae state Governor and will soon be distributed to all agencies, programs, and departments involved.

Kosrae Invasive Species Awareness Day

March 10th marked the 10-year celebration of the Kosrae Invasive Species Awareness Day, an event first created by KIST in 2015. This year's theme was "Kosrae Invasive Species Are Everyone's Responsibilities". It was celebrated with a collaborative field trip bringing 18 students and three staff from the College of Micronesia to visit sites affected by invasive species in Kosrae. The students gained knowledge on how and where invasive species impact Kosrae.

New Assistant Professor of Entomology at the University of Guam

Dr. Alfred Daniel Johnson is an entomologist specializing in insect biodiversity, parasitoid ecology, and forest and agricultural pest management. He earned his Ph.D. from Tamil Nadu Agricultural University (India), where his research focused on parasitic Hymenoptera diversity and the ecological impacts of insecticides. His work contributed to insect taxonomy and the development of India's first Insect Museum at TNAU.

Dr. Johnson has conducted international research across India, Israel, and the United States, including postdoctoral work at Ben-Gurion University, the Hebrew University of Jerusalem, and Tennessee State University. His research has addressed parasitoid-host interactions, invasive species, and pest management in diverse systems, including forest, desert, and nursery ecosystems.

Currently, he serves as Assistant Professor of Entomology at the University of Guam, where he leads efforts in insect diagnostics, biodiversity assessment, and sustainable pest management in Pacific island ecosystems. His work integrates global field experience with applied research to support forest health and resilient agricultural systems.



Figure 34. Kosrae Invasive Species Taskforce Strategic Action planning meeting Photo credit: Annie Esau, Kosrae Island Resource Management Authority (KIRMA), Kosrae State Government



Figure 35. Students and Kosrae State Government staff that participated in the Kosrae Invasive Species Awareness Day. Photo credit: Annie Esau, Kosrae Island Resource Management Authority (KIRMA), Kosrae State Government



Figure 36. Dr. Alfred Daniel Johnson, Assistant Professor of Entomology, UOG

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