



COMMONWEALTH OF THE NORTHERN MARIANA ISLANDS  
DEPARTMENT OF LANDS AND NATURAL RESOURCES  
DIVISION OF AGRICULTURE – CNMI FORESTRY  
COOPERATIVE FOREST HEALTH PROTECTION  
FIVE-YEAR PLAN 2010 - 2015



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CNMI FORESTRY  
LAND MANAGERS  
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DEPARTMENT OF LANDS AND NATURAL RESOURCES

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## INTRODUCTION

Because of our geographic isolation, the Mariana Islands lack diversity in their ecosystems. As a result, introductions of new species usually mean trouble. In the case of pests introduced to the islands, it's the lack of natural controls magnify the impact of the pest.

This is true in the Commonwealth of the Northern Mariana Islands, where past introductions of pests and diseases have seriously affected Forestry and Agricultural production. Currently there are numerous species of plants, animals, and diseases within the CNMI that can be classified as pests. Species with the greatest potential for damage are those introduced with the absent of their biological enemies.

At the same time, there is always the risk of new introductions, as contact with other areas via shipping, airplanes, and tourism increases. Ongoing work by the Forestry Section's has focused on Forest and Urban pests such as the *Coccinia grandis*, *Chromolaena odorata*, *Antigonon leptopus*, *Quadrastichus erythrinae*, *Pbellinus noxious* and others as listed in the <http://www.hear.org/pier/>.

The Forestry Section is working closely with Entomologist and Pathologist from the Northern Marianas College – Cooperative Research, Extension and Education Services. These professional services agreed to assist Forestry Identify discovered pests in and throughout the CNMI's 24,000 acre forests. Additional assistance in identifying and controlling forests pests is available from the University of Guam, the U.S. Animal and Plant Health Inspection Service, and the USDA Forest Service. For a number of years, dealing with pest problems in the Commonwealth has been handled as each problem is encountered. Attempts to minimize insect and disease problems have included monitoring and eradication via chemical and biological control methods. Strict quarantine measures have also been employed when appropriate.

The Cooperative Forest Health (CFHP) has been designed to assist the CNMI in meeting its continuing need to monitor and control forest pests, and to promote a healthier and a more manageable forest. The program's goals identifies, monitoring and, if necessary, controlling existing and detrimental pests that threatens the forests fauna. The term "pests" includes insects, diseases, plants, and animals that have a detrimental effect on the condition of forest resources.

Impart of the CFHP mission is to avail feasible technology assistance to landowners and land-managers that are committed to the protection, restoration, maintenance, enhancement and/or conservation of their forest resources. The strategic direction is to ensure that such benefits were shared accordingly and that all issues are recorded and taken affirmative action to protect, preserve, conserve and enhance the fragile forest ecosystem.

The CNMI Forestry Section thru the Department of Lands and Natural Resources-Division of Agriculture will continue to administer this program along with the advisement from the CNMI-Forestry Advisory Committee throughout each funded year. The Committee is made up of resource professionals, state and federal agency, program managers, private landowners, and private businesses. See council listing on page 9.

### **PURPOSE:**

The purpose of the Cooperative Forest Health Program is to protect, promote, and maintain indigenous trees, and to educate CNMI's land managers and landowners the value of a healthy forest. This plan will also help ensure long-term steward and a more sustainable island ecosystem. These program's objectives will ensure that with a healthy forest comes reduction of soil erosion, enhanced wildlife habitat, recovery of native or indigenous tree species, and more.

### **VISION:**

Forestry's vision with the CFHP Program is to have a thriving healthy sustainable island ecosystem for the well-being of its citizens and visitors. With such healthy ecosystem, comes the promotion and regeneration of native plant species, supporting a balanced synergy amongst all living organism while sustaining its multi-cultural value.

## **MISSION STATEMENT:**

The mission of the Forestry Section with CFHP is to promote, to protect, to enhance and to help maintain a healthy sustainable island forest ecosystem. Impart of the mission is to maintain and continue good conservation practices of our native flora and its bionetwork.

## **CURRENT SITUATION:**

Most of the discovered and recorded forest health issues are invasive weeds that out-compete forest plants species throughout the Marianas archipelagos. These weeds have found means to adapt at an alarming rate thus capable to multiplying with minimal limitation due to the absence of its natural enemies. Disturbed areas become vulnerable at most places, whereas the removal of tree canopies allows other faster weed species to overcome.

Another issue is the introduction of exotic species for landscaping or agricultural purposes. These introduced species vary from a shrubby plant to climbing vines, brought by island residents or reoccurring visitors. Although interjected by our Quarantine inspectors, such plant species were not listed in the database to be noxious or threat to the island's ecosystem, thus were released as agricultural goods. This deficiency opens the ability for many plant species to be introduced from neighboring countries without difficulties. In addition, the introduction of forest product, poses much treats of introducing new forest pest. An example would be the accidental introduction of *Quadrastichus erythrinae* (Eulophidae), where presumably was brought in by landscapers of major golf resorts.

## **IMPACT OF INVASIVE SPECIES**

Invasive species and encroachment on forest conservation areas are real issues that have influenced adversely on the health and sustainability of our forests and its bionetwork. The *Coccinia grandis*, commonly referred to as scarlet gourd, is the most invasive and a serious threat to the health of our forests and urban vegetative mosaic. The scarlet gourd is a recent introduction (early 1990s) that was first observed in the I Denne area near Capitol Hill and has spread covering about 80% of the island of Saipan's, according to a survey conducted by Forestry and its GIS staff in 2004.

The proposed solution is to contain the spread of the scarlet gourd. This will require establishing buffer zones and using mechanical (cut, bare root, bag and burn) and herbicidal (Garlon 3) and biological agent as means to make certain that the scarlet gourd does not spread further. These methodologies were implemented but the release of bio-control agents such as the *Acythopeus coccinae* (Leaf mining weevil), and *Militia oedipus* (Stem boring larvae) proofs to be the longest standing and self sustaining approach.

In the Northern Islands, feral animals such as goats, pigs, and cows have had a very negative impact on the environment denuding large expanses of the forest. Extermination of the feral animals is a very expensive endeavor but has been accomplished on Sarigan. A section of the island of Anatahan has been fenced to protect the village side of the island vegetation from the ravages of grazing feral animals. There are no reports of scarlet gourd infestation in these areas.

Invasive species threaten the bio-security of the CNMI. The high cost of containing the scarlet gourd highlights the need to invest more of our forestry resources on prevention of introduction of new species into the CNMI. More training and education needs to be provided to the Forestry staff, the Quarantine Officers at our Airports and Seaports and to all forestry volunteers. Then, the CNMI needs to establish more rigorous and thorough interdiction programs for invasive species at our ports of entry.

## **STRATEGIES:**

Conservation Areas: Manage conservation areas in accordance with the statutory mandate that created these conservation areas. This requires our conservation officers to monitor and enforce the conservation restrictions in accordance with the statutory mandate. In addition, we will monitor the health of the forests and enhance the health through planting of native species throughout the 24,000 acreage of forestlands. Signage will be used at each of our conservation areas to better educate the public on those activities that are prohibited in each of the

conservation areas.

The conservation islands of Maug, Uracas, Asuncion and Guguan, are to be maintained as sanctuaries used only for the preservation protection and enhancement of natural resources, including but not limited to bird, wildlife and plant species. These four islands are to remain uninhabited and have a no take policy and a prohibition on entry unless the purpose is scientific research and a permit for this has been issued. The conservation island of Managaha has a no take policy but it may be used for cultural and recreational activities. The conservation areas of Forbidden Island and Bird Island are sanctuaries for the preservation and propagation of plant and wildlife species. Entry is allowed into these two sanctuaries for educational and scientific purposes. The conservation areas of Kagman, Marpi and the areas on Tinian (Tinian Monarch Mitigation Area) and on Rota (I Chenchon, Sabana, Tapingot) have no take policies but are not as restrictive as the constitutionally mandated conservation areas. The Forestry Section will assist in the development of management plans for each conservation area that take into account its unique forest resources, wildlife, historical resources and recreational resources.

#### **OUTCOME-SUSTAINABLE FOREST ECOSYSTEM:**

The Cooperative Forest Health Program will address the need to create and maintain healthy sustainable forest ecosystem. This healthy ecosystem includes, stable shoreline, wind barriers, coastal runoffs, stable soil, clean water, diverse wildlife and a more defined landscape. In addition, this healthy ecosystem builds pride within landowners along with some economic return. The ecological restoration and enhancement aspect of the Forest Health will continue as encouragement for partnership between the USDA Forest Service, CNMI Government and the CNMI's private landowners and Managers of Natural Resources.

#### **GOALS:**

##### **A. PHYSICAL/ BIOLOGICAL**

**Goal (01):** CONDUCT FOREST PEST SURVEY TO DETERMINE IF THERE IS ANY NEW OR UNKNOWN PEST

**Objectives:** Staff and volunteers will conduct site visits throughout the CNMI Forest of approximately 24,000 acres for any pests. This survey will involve physical inspection along with available traps to determine the present of forest pest. Such survey will be aligned with the recommendation of an entomologist or plant pathologist.

**Goal (02):** DECIDE THE BEST APPROACH TO DEAL WITH PARTICULAR PEST AND IMPLEMENT ACTION

**Objectives:** Program managers and the Forestry Advisory Council will work with Entomologist and Plant Pathologist to determine the best approach to deal with pest outbreak in the CNMI. This collaboration will be inline with the Memorandum of Agreement between DLNR and NMC-CREES.

**Goal (03):** EVALUATE REGIONAL PEST AND THE SUSCEPTIBILITY TO THE CNMI BASE ON INTRODUCTION, SPEED OF SPREAD, AND DAMAGES TO THE FOREST ECOSYSTEM

**Objectives:** Program managers, Entomologist and Plant Pathologist will do the evaluation. This will be based on methodology approved thru scientific approach as universally understood amongst all pest evaluators. Pest origin will be noted, damages it cause, hosts, spread and life cycle will be recorded for data purposes. These projects will be lead by recognized Entomologist and or Plant Pathologist.

**Goal (04):** DEVELOP INFORMATION BROCHURES OR POSTERS ABOUT EXISTING PESTS IN THE CNMI. USE IT TO INFORM THE PUBLIC SO THAT UNWANTED PESTS CAN EASILY BE RECOGNIZED AND TREATED ACCORDINGLY

**Objectives:** Program managers along with its advisory council will create and develop informational and educational brochures and posters to convey the importance of pest control. These resources will be shared with all ports of entry and to school students, government, and non-government agencies to share the impact of what detrimental of pest can do in the pristine forest ecosystem. These materials can also be used as mechanism to identify and prevent insects or plants species from entering or from exported as agricultural goods.

**Goal (05): BENEFICIAL INSECTS WILL BE PROMOTED TO ENSURE CONTROL OF PEST OUTBREAK AND SPREAD**

**Objectives:** Program managers, Entomologist and Plant Pathologist will promote and aid the spread of beneficial insects to control outbreaks of current pest listed in the CNMI. New pest discovery will be researched for its natural enemies throughout the region. If any biological control has been determined, the process will undergo specificity testing prior to requesting for approval from the USDA –APHIS. The process will be shared with the US-Forest Service and other partners in the program.

**Goal (06): SUPPORT THE REDUCTION OF WILDFIRES THROUGH THE REFORESTATION PROCESS, HEALTHY FOREST HAS GREATER RESISTANCE TO WILD FIRES.**

**Objectives:** Program managers and staff will work with other agencies and volunteer groups to develop and establish a workable project enhancing a mono forest or grassland into a healthier forest stand while reducing bio-fuel content. In the process, these healthy forests will enhance wildlife habitat, ultimately achieving a complete bionetwork of a preferred flora and fauna.

**Goal (07): DISTRIBUTE AVAILABLE PLANT STOCKS TO PRIVATE LANDOWNERS AS PART OF THE RE-PLANTING PROJECTS UNDER THE FOREST HEALTH PROGRAM IN THE CNMI**

**Objectives:** Program managers and staff will avail healthy plant stock to clientele to aid with recovery of devastated forest. This practice will support the coverage of open spaces disallowing pest species to overtake. In additions, such practice will ensure diversity amongst forest tree and plant species.

## **B. SOCIAL**

**Goal (01): SEEK VOLUNTEERS TO ASSIST IN THE REMOVAL AND DESTRUCTION OF DISCOVERED PESTS**

**Objectives:** Program managers and implementers will seek partnership with NGO's to assist with the removal and destruction of pest on certain project sites. This practice will also bestow the idea of site adoption while attaining group-satisfaction. Methodology will depend on the target specie or site location. A recognized Entomologist and or Plant Pathologists will head methodology of removal.

## **C. INSTITUTIONAL / EDUCATIONAL**

**Goal (01): THE FORESTRY SECTION WILL BE COORDINATED WITH LEARNING INSTITUTIONS TO EDUCATE AND TRAIN LOCAL STAFF ON PEST IDENTIFICATION**

**Objectives:** Program managers, will avail local staff time to attend trainings and workshops to improve its staff skills in support of the forestry program implementation. These training and workshops will be related to forestry and its purpose towards conservation, preservation, protection and enhancement of its natural resources.

**Goal (02): CNMI FORESTER AND ITS ADVISORY COUNCIL WILL WORK TOGETHER TO ENSURE PROGRAM IMPLEMENTATION GETS CARRIED OUT ANNUALLY ACCORDING TO ITS PROPOSED AND APPROVED PROJECTS**

**Objectives:** Program managers and staff will work with its Advisory Council to complete needed reports every quarter or upon requests. Submission of progress will be noted and reviewed by key players.

**Goal (03):** CNMI FORESTER AND ITS ADVISORY COUNCIL WILL WORK WITH VARIOUS GOVERNMENTS AND PRIVATE AGENCIES TO ENSURE PROPER PLANNING GETS IMPLEMENTED WITHIN ANY DEVELOPMENT OR DISCOVERY OF PEST IN THE FOREST

**Objectives:** Program managers, Entomologist and Plant Pathologist will do the evaluation. This will be based on methodology approved thru scientific approach as universally understood amongst all pest evaluators. Pest origin will be noted, damages it cause, hosts, spread and life cycle will be recorded for data purposes. These projects will be lead by recognized Entomologist and or Plant Pathologist.

**Goal (04):** EDUCATIONAL INFORMATION REGARDING FOREST HEALTH PROGRAM AND OTHER NATURAL RESOURCES ASPECTS WILL BE MADE AVAILABLE TO ANY PUBLIC AND PRIVATE SCHOOLS, COMMUNITIES OR INTERESTED GROUPS IN THE CNMI.

**Objectives:** Program managers along with its advisory council will create and develop informational and educational brochures and posters to convey the importance of pest control. These resources will be shared with all ports of entry and to school students, government, and non-government agencies to share the impact of what detrimental of pest can do in the pristine forest ecosystem. These materials can also be used as mechanism to identify and prevent insects or plants species from entering or from

**Objectives:** To utilizes the five-year strategic plan, so that the forestry staff and forest stewardship council could implement proper program throughout the CNMI. Also, to use as guide for grant submission throughout the five-year funding period.

**Objective:** To improve existing projects including; Arbor planting, Neighborhood Greening, Park Planting, School and Businesses Beautification, Beach Planting and Church Grounds.

**Objective:** To maintain an open communication with inter-island agencies and our Federal counterpart. These communication processes would involve Phone, fax and Internet accounts.

**PERFORMANCE MEASURES:**

A superlative performance of a Cooperative Forest Health Program rests on the acceptance of each land managers, their implementation through meeting the programs goals an objectives, raising awareness, conservation practice and participation in all aspects of tree care throughout the island’s landscape. With a successful program implementation, favorable word and action will be shared with landowners.

**SUMMARY:**

The above goals and objectives establish a broad Five-Year Strategic Plan for the Forest Health Program. Its specific activities, projects and tasks will be incorporated into the yearly progress reports, Statewide Assessment and Resource Strategies and Forestry’s annual grant applications. The CNMI Forester and its Forestry Technical staff will also administer the programs operation.

The CNMI-Forestry Advisory Council will provide assistance and direction to the Forester as to the approached workable to all agencies, groups and interested individuals.

**SUPPORTING STAFF AND GROUP: (NONE-VOTING BODY)**

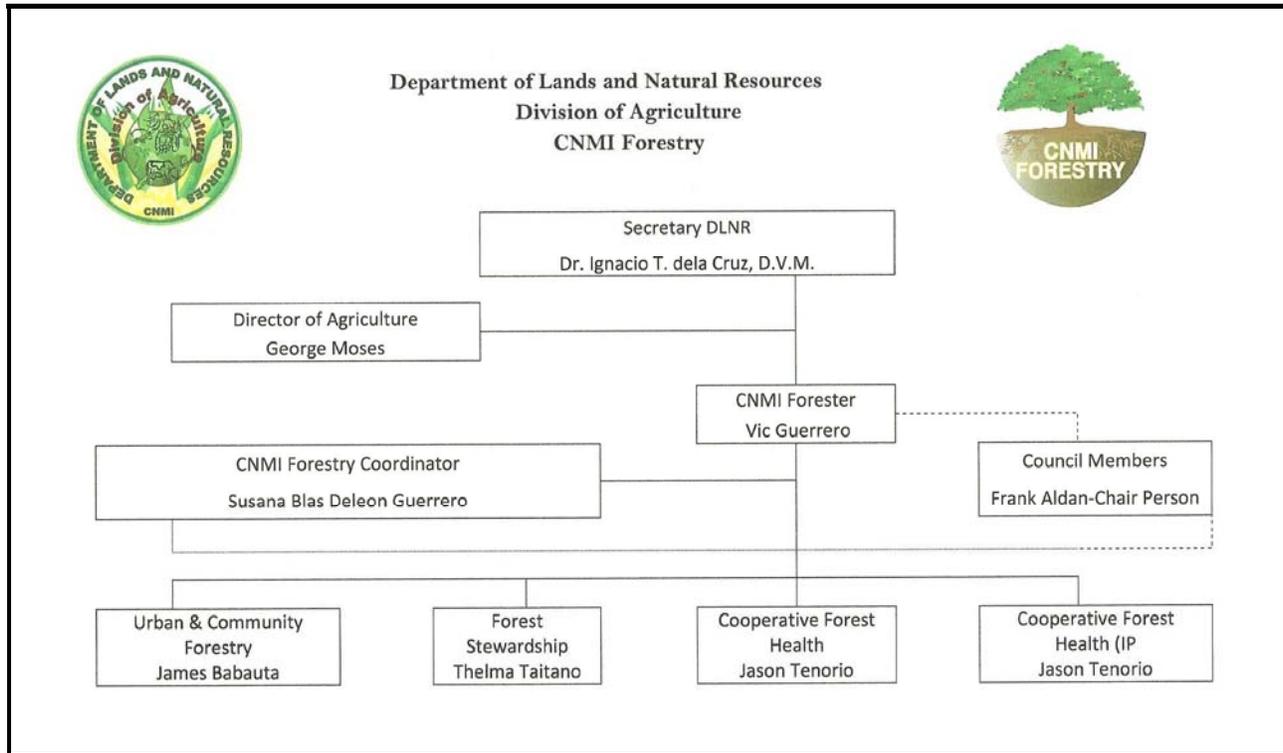
- Mrs. Susan B. Deleon Guerrero (CNMI Forestry Program Coordinator)
- Ms. Thelma Taitano (Forestry Technician)
- Mr. Jason A. Tenorio (Forestry Technician)

- Mr. James N. Babauta (Forestry Technician)
- Mr. George Moses (Director of Saipan Agriculture)
- Honorable Ramon Dela Cruz (Tinian Mayor)
- Mr. Richard K. Ferrell (Tinian Resident Director for Lands and Natural Resources)
- Honorable Melchor A. Mendiola (Rota Mayor)

**CNMI ADVISORY COUNCIL:** This council oversees forestry’s projects implementation and activities. This council is as follows:

Name of Council	Role in the Community	Position
Frank DIG Aldan	Business Owner	Council Chairperson
William Torres	Advisor Municipal Council	Council Vice- Chairperson
Frank Sablan	Self Employed	Council Member
Dr. Tony Stern	Business Owner / Medical Doctor	Council Member
Cathy Yukanavich	NGO – Marianas Island Nature Alliance (MINA)	Council Member
Sam Palacios	Self Employed	State Technical Advisory
Vacant	Tinian Island Forester	State Technical Advisory
James Manglona	Rota Island Forester	State Technical Advisory
Laura William	Biologist Fish and Wildlife – Division of Fish and Wildlife (DLNR)	State Technical Advisory
James Eller	District Conservationist – Natural Resources Conservation Services (NRCS)	State Technical Advisory
Daniel Suel	CNMI Forest Fire Coordinator – Department of Public Safety (DPS)	State Technical Advisory
Vicente S. Borja	Agriculturist – Division of Agriculture - DLNR	State Technical Advisory
Joe Kitalong	Nursery Man – Division of Parks and Recreation (DLNR)	State Technical Advisory
Tim Lang	Division of Environmental Quality - DEQ	State Technical Advisory
Ben Cepeda	Beautification Manager - Saipan Mayor’s Office	State Technical Advisory
Dr. Dilip Nandwani	Plant Pathologist – Northern Marianas College – Cooperative Research Extension and Educational Service (NMC-CREES)	State Technical Advisory
Dr. Marisol Quintanilla	Entomologist/Nematologist – Northern Marianas College – Cooperative Research Extension and Educational Service (NMC-CREES)	State Technical Advisory

**ORGANIZATIONAL CHART FOR THE CNMI FORESTRY:**



**Priority Maps of Saipan, Tinian and Rota**

