2005 International Institute of Tropical Forestry
USDA Forest Service

Project Title:
Forest Health Fact Sheets

Abstract:

Native pests as well as exotic pests can threaten ecosystem health and viability. The development of educational materials is mandatory to help in early detection of forest pests and non-native invasive species in Puerto Rico. Forest personnel need resources to help with the screening and rapid identification of key pests and diseases. The development of pest fact sheets will assist forest personnel in the rapid identification of forest pests and development of a sustainable management plan for the protection of forest trees. This proposal requests $ 34,120 in federal funds to: 1) develop forest pests fact sheets, 2) translate into English existing fact sheets of forest key pests and recently introduced pests, and 3) give field days to forest personnel in identification of pests and implementation of effective management strategies. The outcomes of this project will lead to reduce the potential for pest problems on trees in state and urban forests in Puerto Rico.

PROJECT DURATION: 2009-2011

PROJECT DIRECTOR:

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Justification

The Forest Health Protection Program provides technical assistance on forest health-related matters, particularly those related to disturbance agents such as native and non-native insects, pathogens, and plants. They offer specialized assistance to incorporate disturbance considerations into forest plans and decisions. (USDA Forest Service, Forest Health Protection). In Puerto Rico we have developed educational information about identification and management of pests in forest trees (Almodóvar, W. 2005, O'Farrill, H., 2007). *Apate monacha*, the black borer, *Hypsipyla grandella*, the mahogany shoot borer, *Eulepte concordalis*, the roble leaf webber and *Maconellicoccus hirsutus*, the pink mealybug are some of the most important pests causing damage to forest trees in Puerto Rico. (O'Farrill, H.2007, Martorell, Luis F. 1945).

Early detection and rapid response to new introductions of exotic forest and tree insects and pathogens is a significant component of a Forest Health Management Program. Public interest and professional concern about the adverse effects caused by recently introduced exotic tree

pests, like *Holopothrips* sp., in trumpet tree, *Tabebuia heterophylla* (Almodóvar, W. 2007) stresses the importance of the need for early detection and rapid response in order to contain and eradicate these pests before they become established and adversely affect our forests and trees across our urban landscapes.

The adoption of more sustainable management strategies of pests in forests respond to changes in the perception of the role of the forest, which is increasingly valued not just for economic reasons, but also for its ecological and social functions. There is an urgent need for developing fact sheets in identification of pests and diseases associated with many important tropical timber trees, in both natural and plantation situations (USDA Forest Service, Forest Health Protection: http://www.fs.fed.us/foresthealth/). The development of fact sheets in both Spanish and English enable us to reach a bilingual audience and will better position us to work within a regional context as new or emerging pest problems arise.

This proposal requests $34,120 in federal funds to develop forest pest's fact sheets, translate into English existing fact sheets of forest key pests and recently introduced pests, and give field days to forest personnel in identification of pests and implementation of effective management strategies. The production of fact sheets is essential to promote the adoption and implementation of effective strategies to reduce the potential for pest problems on forest trees and to respond to specific needs of the professional personnel working with forest management. Extension cost sharing-matching funds will leverage $34,508 from total project cost.

Goals and Objectives

The main goal of the project is early detection and rapid response to native or exotic insects and pathogens in Puerto Rico by the development of an educational program consisting of fact sheets in both languages, English and Spanish, and field days.

The objectives of this proposal are the following:

1. To develop forest pest fact sheets.
2. To translate into English existing fact sheets of forest key pests and recently introduced pests.
3. To make field days for personnel related to forest health.

Methodology/Timeline

Pest fact sheets will be prepared to disseminate information about forest pests to personnel related to forest management. The fact sheets will contain will include the following information about the pest/diseases: importance, distribution and host plants, description, biology, symptoms, and references. The purpose of the fact sheets is to provide an informational document for personnel related to forest management and the public and provide easy access to current information available. Seven fact sheets will be prepared in both languages, English and Spanish. This will facilitate awareness detection, prevention and management of forest pests and allows us to deliver timely information on new or reoccurring pest problems. The publication will be available by the internet and in print form. Printed copies will be distributed by the Extension Service, Natural and Environmental Resources Department and local and federal Agricultural Offices.

Existing fact sheets of forest key pests and recently introduced pests in Spanish will be translated into English to provide easy access to current information available to a bilingual audience. This will broaden our efforts in detection, prevention and management of forest pests. This is also important if we want to share scientific information with other Caribbean or American countries with similar problems to cooperate in identification and management efforts. Actually we have seven fact sheets of forest pests in Spanish that will be translated into English. The translated fact sheets will be available by the internet and in print form. Printed copies will be distributed by the Extension Service, Natural and Environmental Resources Department and local and federal Agricultural Offices.

Field days in State Forests with participation of personnel of the Department of Natural and Environmental Resources, Extension Agents, and other personnel related to forest health will be the practical part of the educational program. A very important component of the field days is to involve participants in scouting practices and pest recognition. Three field days will take place in state forests.

Workplan and Timetable

Key Personnel

Wanda Almodóvar, M.S., Extension Plant Pathologist and Project Director, UPR Agricultural Extension Service, College of Agricultural Sciences, Mayagüez, Puerto Rico

Hipólito O'Farrill, PhD., Extension Entomology Specialist, UPR Agricultural Extension Service, College of Agricultural Sciences, Mayagüez, Puerto Rico

Research Assistant

Major Collaborators

Ada Alvarado, M.S. Extension IPM Specialist, UPR Agricultural Extension Service, College of Agricultural Sciences, Mayagüez, Puerto Rico.

Edwin Abreu, M.S. Researcher, UPR Experiment Station, College of Agricultural Sciences, Isabela, Puerto Rico

Workplan:

The key personnel and major collaborators have expertise in all the areas needed for project development and implementation. The Extension IPM Specialist and the Extension Entomology Specialist will help in the revision of the educational materials and translation of existing fact sheets to English.

The director and collaborators of this project will develop field days in state forests. Private transportation and transportation from the University of Puerto Rico, Mayaguez Campus will be used for this purpose. The diagnosis of insect and disease samples will be made in the Extension Diagnostic Clinic by the Plant Pathology and Entomology Specialists.

The Project Director will coordinate a meeting with project staff to discuss the main objectives of this proposal. As part of the discussion we will select pests and diseases of importance that will be included on fact sheets. The development of forest pest's fact sheets will be in charge of the project director, the entomology specialist and the research assistant. The IPM Specialist, the researcher and other members of the Department of Crops and Agroenvironmental Sciences of the College of Agricultural Sciences will revise the factsheets. The project staff and collaborators will help in the development of field days. The educational materials will be prepared in the Mayaguez Campus Press and in the facilities of the Extension Press. We will use a color laser printer and a CD duplicator to produce educational materials in our offices at the Mayaguez Campus Extension office.

Literature Cited:

Almodóvar, W. 2007. *Holopothrips* sp.: Nueva plaga de los robles en Puerto Rico. Fact Sheet. Agricultural Extension Service, Collage of Agricultural Sciences, University of Puerto Rico, Mayagüez Campus.

Almodóvar, W. 2005. Manejo Integrado de Enfermedades en viveros de árboles en Puerto Rico. Manual. Agricultural Extension Service, Collage of Agricultural Sciences, University of Puerto Rico, Mayagüez Campus.

Martorell, Luis F. 1945. A Survey of the Forest Insects of Puerto Rico. Part II. The Journal of Agriculture of the University of Puerto Rico. Agricultural Experiment Station, Rio Piedras, P.R. Page 355-608.

O'Farrill, H. 2007. Las plagas comunes de los árboles urbanos de Puerto Rico. Manual. Agricultural Extension Service, Collage of Agricultural Sciences, University of Puerto Rico, Mayagüez Campus.

USDA Forest Service, Forest Health Protection: http://www.fs.fed.us/foresthealth/