Forestry Department

Food and Agriculture Organization of the United Nations

Forest Health & Biosecurity Working Papers

OVERVIEW OF FOREST PESTS

HONDURAS

June 2008

Forest Resources Development Service
Forest Management Division
Forestry Department

Working Paper FBS/17E
FAO, Rome, Italy

DISCLAIMER

The aim of this document is to give an overview of the forest pest[1] situation in Honduras. It is not intended to be a comprehensive review.

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

[1] Pest: Any species, strain or biotype of plant, animal or pathogenic agent injurious to plants or plant products (FAO, 2004).

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Background

This paper is one of a series of FAO documents on forest-related health and biosecurity issues. The purpose of these papers is to provide early information on on-going activities and programmes, and to stimulate discussion.

In an attempt to quantify the impacts of the many factors that affect the health and vitality of a forest, the Global Forest Resources Assessment 2005 (FRA 2005) asked countries to report on the area of forest affected by disturbances, including forest fires, insects, diseases and other disturbances such as weather-related damage. However, most countries were not able to provide reliable information because they do not systematically monitor these variables.

In order to obtain a more complete picture of forest health, FAO continues to work on several follow-up studies. A review of forest pests in both naturally regenerating forests and planted forests was carried out in 25 countries representing all regions of the world. This *Overview of forest pests* represents one paper resulting from this review. Countries in this present series include Argentina, Belize, Brazil, Chile, China, Cyprus, Colombia, Ghana, Honduras, India, Indonesia, Kenya, Kyrgyz Republic, Malawi, Mauritius, Mexico, Moldova, Mongolia, Morocco, South Africa, Sudan, Thailand, Romania, Russian Federation, Uruguay; this list will be continuously updated.

Comments and feedback are welcome. For further information or if you are interested in participating in this process and providing information on insect pests, diseases and mammals affecting forests and the forest sector in your country, please contact:

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All contributions will be fully acknowledged.

Acknowledgements

The information on Belize was validated by F. Castañeda and compiled by W. Ciesla and B. Moore.

HONDURAS

Introduction

Honduras has a total land area of 11.2 million hectares. The forest area is 4.65 million hectares or approximately 41.5 percent of the country's total land cover (FAO, 2006). The forest area is comprised principally of *Pinus* spp. (about 60 percent of the forest areas). These fast-growing pines typically develop as even age stands and are subject to frequent episodes of wildfire, mostly of human origin, outbreaks of bark beetles (Coleoptera: Scolytidae) and heavy grazing.

Forest pests

Naturally regenerating forests

Insects

Indigenous insects

***Dendroctonus frontalis* Zimmermann, 1868**

Other scientific names: *Dendroctonus arizonicus* Hopkins
Coleoptera: Scolytidae
Common names: southern pine beetle; bark beetle
Host type: conifer
Hosts: *Pinus* spp.

The most known damaging insect to Honduras' pine forests is the southern pine beetle, *Dendroctonus frontalis*. This insect breeds in the cambium layer of a number of pine species. They kill trees by a combination of two factors: girdling during construction of egg galleries; and the introduction of blue stain fungi of the genus *Ophiostoma*. *Dendroctonus frontalis* has a wide distribution occurring from Pennsylvania in the United States south to Mexico, Belize, Guatemala, Honduras and Nicaragua.

Honduras has a history of massive outbreaks of *Dendroctonus frontalis* beginning in the early to mid-1960s. Between 1962 and 1965, more than 2 million hectares were affected by this insect. In 1964, it was estimated that the outbreak was spreading at a rate of 150 000 ha per month. This outbreak is regarded as the most devastating outbreak of *D. frontalis* throughout the insect's natural range. An outbreak developed in 1982 in naturally regenerated stands that developed following the 1960s outbreak.

Another severe outbreak developed from 2000 to 2003 when 11 650 infestations were detected. This outbreak was part of a regional outbreak that also involved Belize, Guatemala and Nicaragua. In 2000, 1 743 ha were affected. In 2001, the area affected grew to 9 708 ha and expanded to 13 511 ha in 2002. Infestations occurred almost exclusively in young, dense forests ranging from 18-25 years in age with basal areas of 35 m^2 per hectare. These forests had been weakened by overcrowding, recent fires and a prolonged drought.
http://www.fao.org/forestry/site/20528/en/hnd
http://www.fao.org/docrep/007/y5507e/y5507e05.htm

http://www.bugwood.org/factsheets/99-008.html
http://www.barkbeetles.org/spb.html
http://www.eppo.org/QUARANTINE/insects/Dendroctonus_frontalis/DENCFR_ds.pdf
http://www.fire.uni-freiburg.de/GlobalNetworks/MesoAmerica/Fire-Beetle-USFS-Report-2002.PDF
http://www.padil.gov.au/viewPest.aspx?id=300

Introduced insects

No records of introduced insects affecting naturally regenerating forests were found for Honduras.

Diseases

Indigenous diseases

No records were found of indigenous diseases affecting naturally regenerating forests in Honduras.

Introduced diseases

No records were found of introduced diseases affecting naturally regenerating forests in Honduras.

Other pests

Indigenous other pests

Several species of parasitic or semi-parasitic mistletoes are known from Honduras. Species of the genus *Psittacanthus* occur on pines and can cause growth loss and tree stress. One species of dwarf mistletoe is known from Honduras, *Arceuthobium hondurensis.* While many species of the genus *Arceuthobium* are important pests of conifers in North America, *A. hondurensis* is known from only a few locations in Honduras and is regarded more as a curiosity than a pest.

***Psittacanthus* spp.**

Other scientific names:
Santalales: Loranthaceae
Common names: red turpentine beetle; bark beetle
Host type: conifer
Hosts: *Pinus* spp.

Species of the genus *Psittacanthus* occur on pines and can cause growth loss and tree stress.
http://www.forestryimages.org/browse/subimages.cfm?SUB=11620

Introduced other pests

No records were found of other introduced forest pests (e.g. mites, nematodes, mammals, etc.) affecting the naturally regenerating forests in Honduras.

Diebacks and other conditions

No records were found for diebacks and other conditions affecting the naturally regenerating forests of Honduras.

Planted forests

Honduras has a minimal area of planted forests and no information is available on insects, diseases or other pests affecting planted forests.

Capacity for forest health protection

Government level

The government department responsible for forestry, including forest protection, in Honduras is the recently created Instituto de Conservación Forestal (ICF) which replaces the former Corporacion Hondureña de Desarrollo Forestal (COHDEFOR). In 1984 COHDEFOR began implementation of an integrated pest management (IPM) programme with support from international organizations. This programme consists of a national pest coordinator and forest protection coordinators at each forest region to respond to both fires and bark beetle outbreaks (Billings *et al.*, 2004).

Monitoring and detection

Monitoring and detection of bark beetle outbreaks is done through a combination of aerial and ground surveys.

Data management

A permanent record-keeping system to track *Dendroctonus frontalis* detection and control information has been maintained by COHDEFOR since 1982 (Billings *et al.*, 2004).

Pest management

Management of outbreaks of *Dendroctonus frontalis* is done via an integrated pest management (IPM) programme. Prevention measures include thinning to reduce stand density, removal of damaged and weakened trees, and harvesting trees before they reach maturity. Direct control methods include salvage removal, cut and leave, the use of chemical sprays, and piling and burning of infested trees. Cut and leave, used solely for control of *Dendroctonus frontalis*, consists of felling all trees with fresh attacks or bark beetle brood plus a buffer zone of adjacent uninfested trees which is usually circular. This procedure reduces beetle survival within infested trees and, by disrupting pheromone production, prevents infestations from spreading (Billings *et al.*, 2004).

Private landowners

Most private forest owners in Honduras are small non-industrial landowners and rely on COHDEFOR to manage and protect their forests.

References

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Smith, R.H. 1971. *Red turpentine beetle*. Forest Pest Leaflet 55, US Department of Agriculture Forest Service, Revised May 1971. Available at: http://www.barkbeetles.org/rtb/rtbFIDL55.htm

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OSN = Other Scientific Name (other names, synonyms, other combinations, etc. that have been used for this species)