United States
Department
of Agriculture

Forest Service

Forest Health Protection

August 2004

Forest Insect and Disease Conditions in the United States 2003

Healthy Forests Make A World of Difference

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PREFACE

This is the 53rd annual report prepared by the U.S. Department of Agriculture Forest Service (USDA Forest Service) of the insect and disease conditions of the Nation's forests. This report responds to direction in the Cooperative Forestry Assistance Act of 1978, as amended, to conduct surveys and report annually on insect and disease conditions of major national significance. Insect and disease conditions of local importance are reported in regional and State reports.

The report describes the extent and nature of insect- and disease-caused damage of national significance in 2003. The first section of this report highlights emerging insect and disease issues. This is a new section added in 2003. Regional and temporal trends in selected insect and disease conditions are highlighted in the second section of the report. Distribution maps are provided for some pests. Graphs depict acreage trends over the last several years for some pests. Tables show acreages affected for selected pests by State by year for the last 5 years.

The third section of the report brings together insect, disease, and abiotic agent damage reports from each affected region under the organism's or agent's name. The organisms and agents are arranged alphabetically in the appropriate section—

- insects—native;
- insects—nonnative;
- diseases—native;
- diseases—nonnative;
- diseases—origin unknown;
- declines and complexes;
- seed orchard insects and diseases;
- nursery insects and diseases; and
- abiotic damage.

These categories are listed in the table of contents; there is no index.

The information in this report is provided by the Forest Health Protection Program of the USDA Forest Service. This program serves all Federal lands, including the National Forest System and the lands administered by the Departments of Defense and the Interior. Service is also provided to tribal lands. The program provides assistance to private landowners through the State foresters. A key part of the program is detecting and reporting insect and disease epidemics and the effects of wind, air pollution, floods, droughts, and other agents. Detection surveys are conducted on a regular basis by State and USDA Forest Service program specialists.

For additional information about conditions, contact the USDA Forest Service office listed on the next page (see map for office coverage) or your State forester.

The USDA Forest Service also prepared "America's Forests: 2003 Health Update," which highlights major forest health concerns. The report deals with exotic (nonnative) pests, the rural-urban-wildland interface, and the effects of weather and air pollution on forests.

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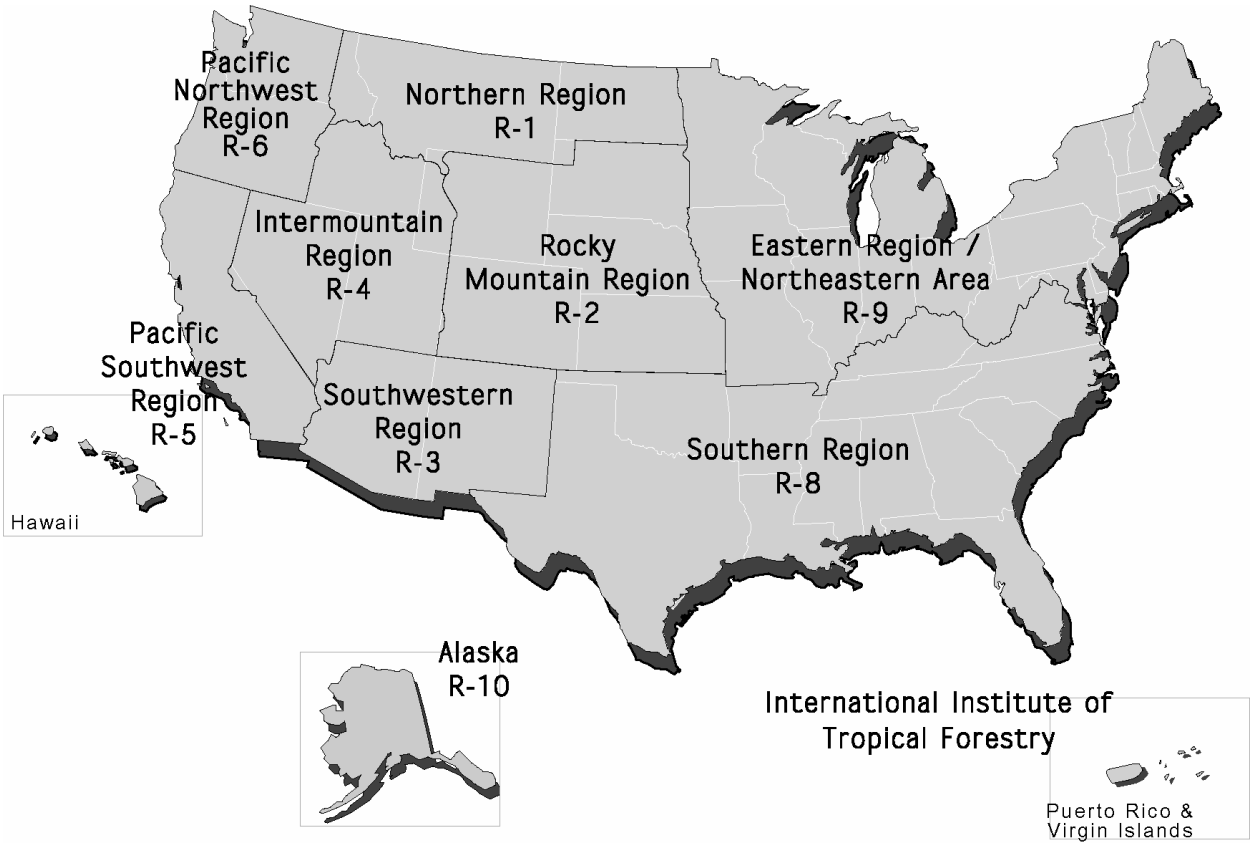
USDA Forest Service Regions and Area



Copies of this report are available from:
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This report is also available on the Internet at:
www.fs.fed.us/foresthealth/current_conditions.shtml

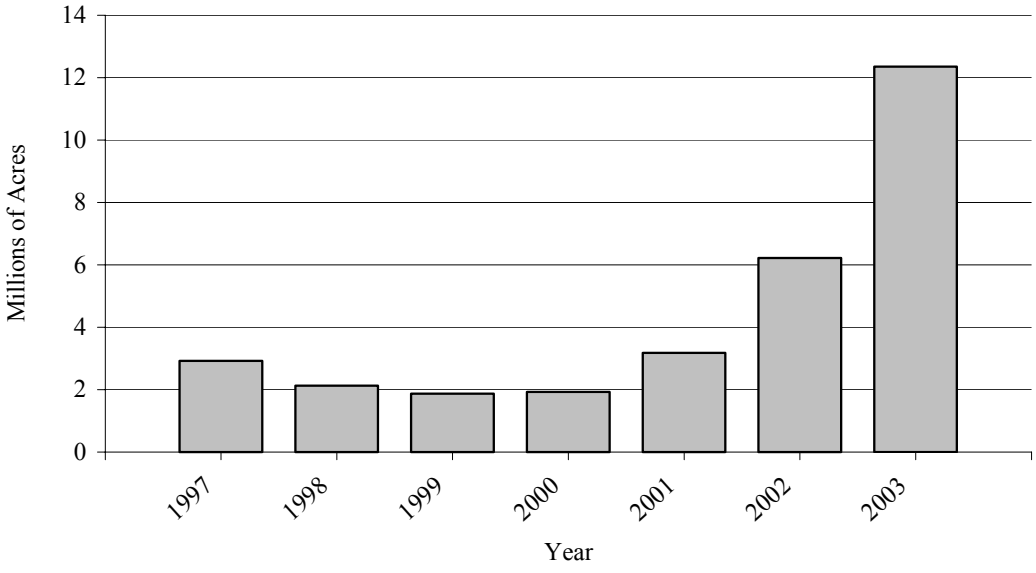
CONTENTS

EXECUTIVE SUMMARY

Introduction

There are approximately 750 million acres of forested land in the United States, about one-third of the total land area (including Alaska and Hawaii). Nationwide, these forests provide numerous economic, social, and environmental benefits to residents of the United States and visitors from abroad.

Native and nonnative (exotic) insects and diseases, as well as abiotic influences, cause significant damages that affect the health and productivity of our forests. The chart below shows how insect- and disease-caused tree mortality has changed over the past 7 years. The recent dramatic rise in mortality is attributed to bark beetle infestations in the West, particularly ips beetles in pinyon pine forests.



Highlighted below are some of the major native insects and diseases of concern as well as some nonnative insects and diseases that have been introduced into the United States. These pests either are causing serious damage or have the potential to do so.

Insects: Native

Southern pine beetle – The current southern pine beetle outbreak continued to decline after peaking at almost 13.5 million acres in 2001. About 2.4 million acres were affected in 2003, with outbreak counties being reported in Georgia, New Jersey, and Tennessee.

Mountain pine beetle – Mountain pine beetle outbreaks increased in every State in the West. Affected acreage rose from about 1.5 million acres in 2002 to over 2.2 million acres in 2003.

Spruce budworm – Spruce budworm remained at low levels in 2003, with only small areas of defoliation being reported from Michigan, Minnesota, and Wisconsin.

Western spruce budworm – Overall, defoliation by western spruce budworm increased only slightly from about 617,000 acres in 2002 to about 631,000 acres in 2003. However, Idaho, Montana, and Washington experienced significant increases.

Spruce beetle – Outbreaks were present in Arizona, Colorado, Montana, Utah, and Wyoming. In Alaska, spruce beetle activity decreased to endemic levels.

Insects: Nonnative

Asian longhorned beetle – In Chicago, only one beetle was captured and two infested trees were removed. About 100 infested trees were found in Jersey City. In New York, several new infested locations were discovered, but all these were within the quarantine area.

Gypsy moth (European) – Overall, reported gypsy moth defoliation decreased about 411,000 acres in 2002 to about 251,000 acres in 2003.

Common European pine shoot beetle – The beetle continued to spread from its original introduction site in Ohio. Twelve States are currently infested.

Hemlock woolly adelgid – This insect continued its rapid spread in 2003. Rearing and release of biological control agents continues as rapidly as possible to reduce its damage.

Diseases: Native

Fusiform rust – Rust continues to be the most significant disease of loblolly and slash pine in the South. The Resistance Screening Center in Asheville, NC, tests seed lots for fusiform rust resistance against rust collected in the planting vicinity. Rust resistant families have been developed that produce fewer galls, both in screening trials and field plantations.

Dwarf mistletoes – These are native plants that parasitize western conifers and larch. They have increased due to fire suppression, and the witches' brooms they cause provide fuel ladders that increase fire severity. Drought exacerbates the impact of mistletoe on tree growth and survival. An estimated 28.8 million acres have some level of infestation.

Root diseases – Stress from root disease is frequently an underlying cause of mortality attributed to drought, bark beetles, and defoliators. Different pathogens can cause root disease, depending on regional conditions and host types present.

Diseases: Nonnative

Beech bark disease – Introduced in North America about 1890, this disease continues to spread, killing beech trees from Maine to Michigan, and as far south as North Carolina and Tennessee. The disease is caused by an interaction of fungal pathogens and scale

insects with sucking mouthparts that pierce the tree bark. The disease is killing trees and spreading faster than predicted, with nine Counties in North Carolina and Tennessee affected, and eight Counties in Michigan.

White pine blister rust – Introduced about the turn of the 20th century, it now occurs throughout most of the ranges of white pines, and has caused extensive tree mortality. It affects commercially important white pine, as well as ecologically sensitive high-elevation species. The disease was found this year for the first time on bristlecone pine.

Diseases: Origin Unknown

Butternut canker – The fungus that causes this disease was identified in the late 1970s and can be found throughout most of the natural range of butternut. The pathogen kills large trees, saplings, and regeneration, causing multiple cankers under the bark that merge and kill the tree. This disease is a serious threat to the survival of the species.

Sudden Oak Death – Caused by *Phytophthora ramorum*, this recently recognized disease is killing oaks and other plant species in California and a small portion of southwestern Oregon. First reported in 1995, the disease has been confirmed in 13 coastal counties north and south of San Francisco and in one county in southwestern Oregon. The outbreak in Oregon is under an eradication program. Dissemination via nursery stock is a major concern.

Part 1: Emerging Issues

Part 1 contains information on current emerging insect and disease issues.

Part 2: National Highlights

Part 2 contains more information on selected insects and diseases, including some maps, tables, and graphs.

Part 3: Conditions by Damage Agent by Region

Part 3 provides more detailed information about the insects and diseases discussed here as well as others. The report also describes abiotic factors, such as wind and drought, that damage forests. Abiotic factors often predispose the trees to insect and disease buildups.