Nonnative Invasive Plants of Southern Forests

A Field Guide for Identification and Control

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Front Cover

***Upper left*—**Chinese lespedeza (*Lespedeza cuneata*) infestation that developed from dormant seed in the soil seed bank after a forest thinning operation.

***Upper right*—**Kudzu (*Pueraria montana*) infestation on the urban-wildland interface.

Lower left—Chinese privet (*Ligustrum sinense*) and dormant kudzu invading and replacing a pine-hardwood stand.

***Lower right*—**Cogongrass (*Imperata cylindrica*) infestation under mature slash pine (*Pinus elliottii*).

Back Cover

***Upper left*—**Stem injection using a hatchet and spray bottle to apply a hack-and-squirt treatment to control silktree (*Albizia julibrissin*).

***Upper right*—**Hand pulling seedlings of Chinese privet (*Ligustrum sinense*).

***Lower left*—**Prescribed burning can often assist in controlling garlic mustard (*Alliaria petiolata*).

***Lower right*—**Containerized native plants for rehabilitation plantings.

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Plant Names and Plant Distribution Maps from:

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ABSTRACT

Invasions of nonnative plants into forests of the Southern United States continue to go unchecked and unmonitored. Invasive nonnative plants infest under and beside forest canopies and dominate small forest openings, increasingly eroding forest productivity, hindering forest use and management activities, and degrading diversity and wildlife habitat. Often called nonnative, exotic, nonindigenous, alien, or noxious weeds, they occur as trees, shrubs, vines, grasses, ferns, and forbs. This book provides information on accurate identification and effective control of the 33 nonnative plants and groups that are currently invading the forests of the 13 Southern States, showing both growing and dormant season traits. It lists other nonnative plants of growing concern, control strategies, and selective herbicide application procedures. Recommendations for preventing and managing invasions on a specific site include maintaining forest vigor with minimal disturbance, constant surveillance and treatment of new unwanted arrivals, and finally rehabilitation following eradication.

Keywords: Alien plants, exotic plant control, exotic weeds, herbicide weed control, integrated vegetation management, invasive exotic plants, invasive nonindigenous plants, noxious plant control.

Contents

Scientific name *International code*

Ailanthus altissima (P. Mill.) Swingle **AIAL**
Synonyms: ailanthus, Chinese sumac, stinking sumac, paradise-tree, copal-tree

Plant. Deciduous tree to 80 feet (25 m) in height and 6 feet (1.8 m) in diameter, with long pinnately compound leaves and circular glands under lobes on leaflet bases. Strong odor from flowers and other parts, sometimes likened to peanuts or cashews.

Stem. Twigs stout, chestnut brown to reddish tan, and smooth-to-velvety with light dots (lenticels) and heart-shaped leaf scars. Buds finely hairy, dome-shaped, and partially hidden by the leaf base. Branches light gray to dark gray, smooth and glossy, with raised dots becoming fissures with age. Bark light gray and rough with areas of light-tan fissures.

Common name *Forest Inventory and Analysis survey code*

Tree-of-Heaven **0341**

Broadcast treatment of herbicide spray to kudzu.

Introduction

Invasions of nonnative plants into southern forests continue to go unchecked and unmonitored. Invasive nonnative plants infest under and beside forest canopies and occupy small forest openings, increasingly eroding forest productivity, hindering forest use and management activities, and degrading diversity and wildlife habitat. Often called nonnative, exotic, nonindigenous, alien, or noxious weeds, they occur as trees, shrubs, vines, grasses, ferns, and forbs. Some have been introduced into this country accidentally, but most were brought here as ornamentals or for livestock forage. These robust plants arrived without their natural predators of insects and diseases that tend to keep native plants in natural balance. Now they increase across the landscape with little opposition, beyond the control and reclamation measures applied by landowners and managers on individual land holdings.

The objective of this book is to provide information on accurate identification and effective control of the 33 plants or groups that are invading the forests of the 13 Southern States at an alarming rate, showing both growing and dormant season traits. It lists other nonnative invasive plants of growing concern and explains control recommendations and selective application procedures. The text and photographs were originally developed to assist in the first region-wide survey and monitoring of these invading species, conducted by the USDA Forest Service's Forest Inventory and Analysis Research Work Unit of the Southern Research Station in collaboration with State forestry management agencies. The four-number survey codes as well as the international plant codes are given for each species (see opposite page).

Integrated vegetation management programs are needed to combat invading nonnative plants. Strategies of surveillance and treatment of new arrivals will safeguard lands, and reclamation of existing infestations can be achieved by concerted control measures and reestablishment of native vegetation.