



# FOREST INVENTORY & ANALYSIS FACTSHEET



Mimosa. (photo by James H. Miller)

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# Invasive Plants Found in Alabama Forests, 2009

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## Introduction

This publication provides an overview of nonnative invasive plants found in forests of the State of Alabama based on an annual inventory conducted by the Forest Inventory and Analysis (FIA) Program at the Southern Research Station of the U.S. Department of Agriculture Forest Service in cooperation with the Alabama Forestry Commission. These estimates and coverage maps will be updated on a periodic basis. For more information regarding past inventory reports for this State, inventory program information, field sampling methodology, and estimation procedures, please refer to the citations at the end of this report.

Foresters and ecologists have noted the spread of nonnative invasive species onto U.S. forest land for decades. Despite soaring costs and inestimable environmental impacts, nonnative invasive species continue to spread across managed and natural forests. This update describes current results from data collected in Alabama between 2001 and 2009 and provides graphic illustrations of where select invasive plant species are being observed in forests across the State of Alabama. Observations of nonnative invasive plants include only those plants on the southern FIA invasive plants "Watch List" which currently contains 33 plant species regionally recognized as problematic nonnative invasive plants.

## Findings

Invasive plants were detected on 2,827 plots across the State, or 67 percent of all forested plots measured (fig. 1). The maximum number of monitored nonnative invasive species detected on an individual plot was six, which occurred on <1 percent of forested plots (table 1). The vast majority (87 percent) of invaded plots contained

Table 1—Invasive species on Alabama forest land—number of species detections and the number and percent of plots on which they occur

Unique species per plot count	Plots number	Surveyed plots <sup>a</sup> percent
1	1,407	34
2	1,045	25
3	285	7
4	65	2
5	24	1
6	1	<1
Total	2,827	67

<sup>a</sup> Percent of surveyed plots out of 4,196.

two or fewer invasive plant species monitored by FIA. Invasive plant presence was highest in the Southeast, West Central, and North Central units with 74, 73, and 72 percent of surveyed plots invaded (fig. 1). The geographic extent of sampled nonnative invasive plants in Alabama forests is considerably different when Japanese honeysuckle (*Lonicera japonica*) is excluded (fig. 2). Comparing the extent of nonnative invasive plants with and without Japanese honeysuckle provides a clear picture of the extent of Japanese honeysuckle across the State.

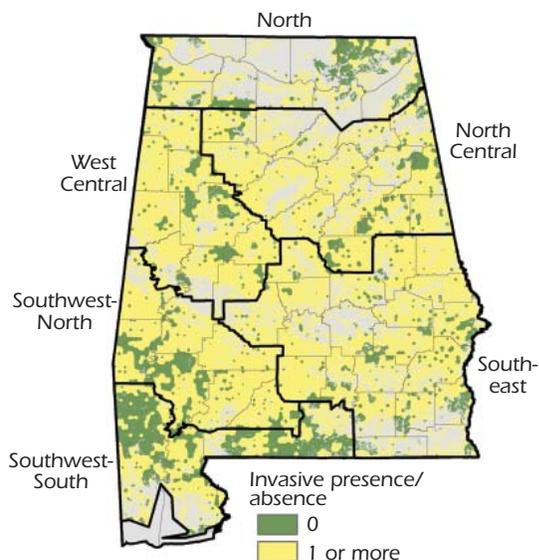


Figure 1—Presence/absence of invasive species on Alabama forest land, 2009.

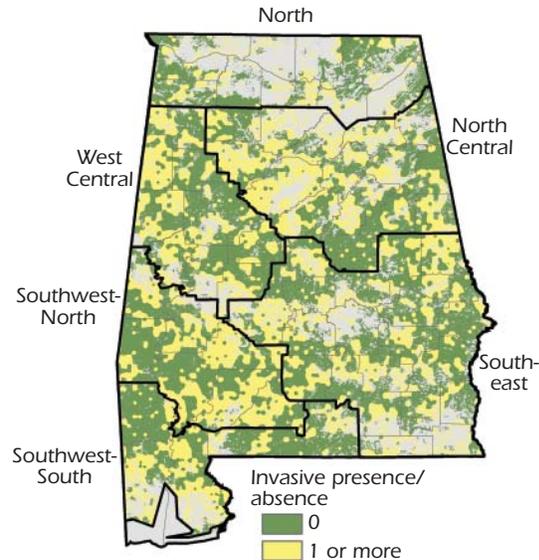


Figure 2—Presence/absence of invasive species (excluding Japanese honeysuckle) on Alabama forest land, 2009.

Japanese honeysuckle was the most frequently detected nonnative species in Alabama (table 2). The seemingly ubiquitous invasive vine was found on 58 percent of all forested plots surveyed, and 86 percent of all plots containing an invasive species. On average, Japanese honeysuckle foliage covered 28 percent of the subplots on which it was found. Chinese and European privets (*Ligustrum sinense*/*L. vulgare*) as a group were the second most frequently detected species, and were noted on 29 percent of measured plots, with an average percent cover of about 22 percent on subplots where it was detected. Japanese climbing fern (*Lygodium japonicum*) was the third most frequently observed nonnative invasive plant in forests of Alabama and found on only 5 percent of surveyed plots in the State. The three previously mentioned species along with mimosa (*Albizia julibrissin*), Japanese/glossy privets (*Ligustrum japonicum*/*L. lucidum*), Chinese lespedeza (*Lepedeza cuneata*), tallowtree (*Triadica sebifera*), nonnative roses (*Rosa* spp.), kudzu (*Pueraria montana* var. *lobata*), and Chinaberry (*Melia azedarach*) comprise the top 10 most frequently detected invasive plants surveyed for on forested plots in Alabama (table 2). The aggressive forest invader cogongrass (*Imperata cylindrica*) is currently the 11th most frequently detected invasive plant in the State.

Invasive vines, primarily Japanese honeysuckle, were the most frequently detected nonnative invasive plant life form (table 3) and were found on 61 percent of all forested plots (fig. 3). Invasive shrubs

**Table 3—Invasive species on Alabama forest land—number of detections by plant life form and the percent of plots on which they occur**

Plant life form	Plots	Surveyed plots <sup>a</sup>
	number	percent
Trees	292	7
Shrubs	1,455	35
Herbs	136	3
Vines	2,543	61
Grass	120	3
Ferns	191	5

<sup>a</sup> Percent of surveyed plots out of 4,196.

**Table 2—Invasive species detected on Alabama forest land with frequency of plot detections and mean percent subplot cover by common and scientific name, 2009**

Common name	Scientific name	Plot detections <sup>a</sup>	Subplot cover <sup>b</sup>
		number	percent
Japanese honeysuckle	<i>Lonicera japonica</i>	2,444	28
Chinese/European privet	<i>Ligustrum sinense</i> / <i>L. vulgare</i>	1,235	22
Japanese climbing fern	<i>Lygodium japonicum</i>	191	9
Silktree, Mimosa	<i>Albizia julibrissin</i>	126	9
Japanese/glossy privet	<i>Ligustrum japonicum</i> / <i>L. lucidum</i>	121	20
Chinese lespedeza	<i>Lepedeza cuneata</i>	97	16
Tallowtree	<i>Triadica sebifera</i>	84	11
Nonnative roses	<i>Rosa</i> spp.	76	11
Kudzu	<i>Pueraria montana</i> var. <i>lobata</i>	71	33
Chinaberry	<i>Melia azedarach</i>	63	18
Cogongrass	<i>Imperata cylindrica</i>	63	34
Nepalese browntop	<i>Microstegium vimineum</i>	42	27
Shrubby lespedeza	<i>Lepedeza bicolor</i>	34	12
Sacred bamboo, Nandina	<i>Nandina domestica</i>	22	7
Chinese/Japanese wisteria	<i>Wisteria sinensis</i> / <i>W. floribunda</i>	16	30
Tree-of-heaven	<i>Ailanthus altissima</i>	10	9
Tall fescue	<i>Lolium arundinaceum</i>	10	43
Princesstree, Royal paulownia	<i>Paulownia tomentosa</i>	9	18
English ivy	<i>Hedera helix</i>	5	49
Tropical soda apple	<i>Solanum viarum</i>	5	7
Nonnative climbing yams—air yam/Chinese yam	<i>Dioscorea bulbifera</i> / <i>D. oppositifolia</i>	4	10
Nonnative bamboos	<i>Phyllostachys</i> spp., <i>Bambusa</i> spp.	4	31
Nonnative vincas, Periwinkles	<i>Vinca minor</i> / <i>V. major</i>	3	24
Autumn olive	<i>Alaegagnus umbellate</i>	1	5
Bush honeysuckles	<i>Lonicera</i> spp.	1	5
Giant reed	<i>Arundo donax</i>	1	30

<sup>a</sup> Plot refers to the forested portion of all subplots measured. If a species was detected on more than one subplot, it is only counted once.

<sup>b</sup> Percent cover in this column is the average cover on an individual subplot, not the whole plot.

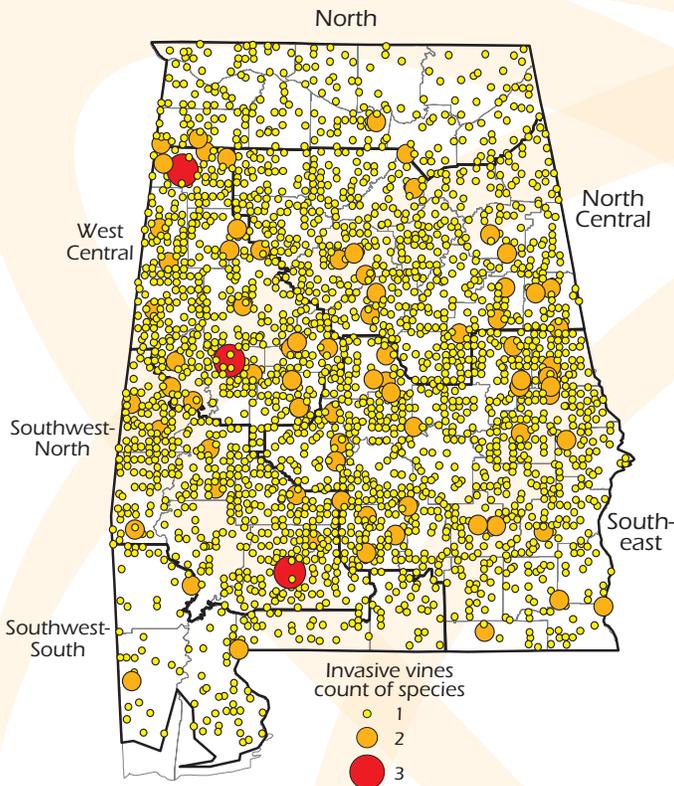


Figure 3—Number of invasive vines on plots, Alabama, 2009.

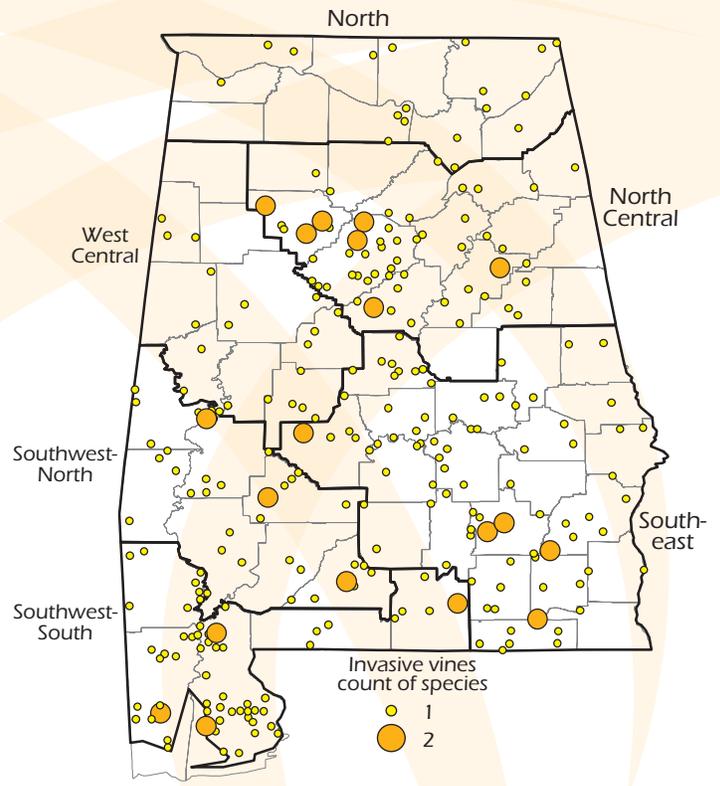


Figure 4—Number of invasive trees on plots, Alabama, 2009.

were found on 35 percent of all forested plots, while trees were found on 7 percent and grasses and herbs were each found on 3 percent of all forested plots surveyed.

Invasive trees were found in each FIA unit of the State (fig. 4). Mimosa was the most frequently detected invasive tree across all units with the exception of the Southwest-South FIA unit where tallotree was the most frequently detected invasive tree. Mimosa detections were highest in the North Central FIA unit. Japanese honeysuckle was the most commonly detected vine and was recorded on 24 percent of plots in the Southwest-South unit, 58 percent of plots in the Southwest-North unit, 66 percent of plots in the Southeast unit, 69 percent of plots in the West Central unit, 66 percent of plots in the North Central unit, and 48 percent of plots in the North unit. No other invasive vine was detected on >3 percent

of plots in any region. Chinese/European privets were clearly the most frequently detected shrubs on Alabama forest land and were detected on 29 percent of all forested plots across the State (fig. 5). No other monitored nonnative shrub was detected on >9 percent of forested plots within any given Alabama unit.

Cogongrass was the most frequently detected invasive grass in Alabama (fig. 6) however, it was only detected on about 2 percent of forested plots surveyed across the State. Cogongrass was detected on 8 percent of forested plots surveyed in the Southwest-South unit. Another invasive grass, Nepalese browntop (*Microstegium vimineum*), while only detected on 1 percent of all forested plots, is considered to be spreading in Alabama. Invasive herbs were most common in the West Central and North Central units as a percent of all forested plots monitored in each unit (fig. 7),



Japanese honeysuckle.



Chinese tallotree.



Tall fescue. (photos by James H. Miller)

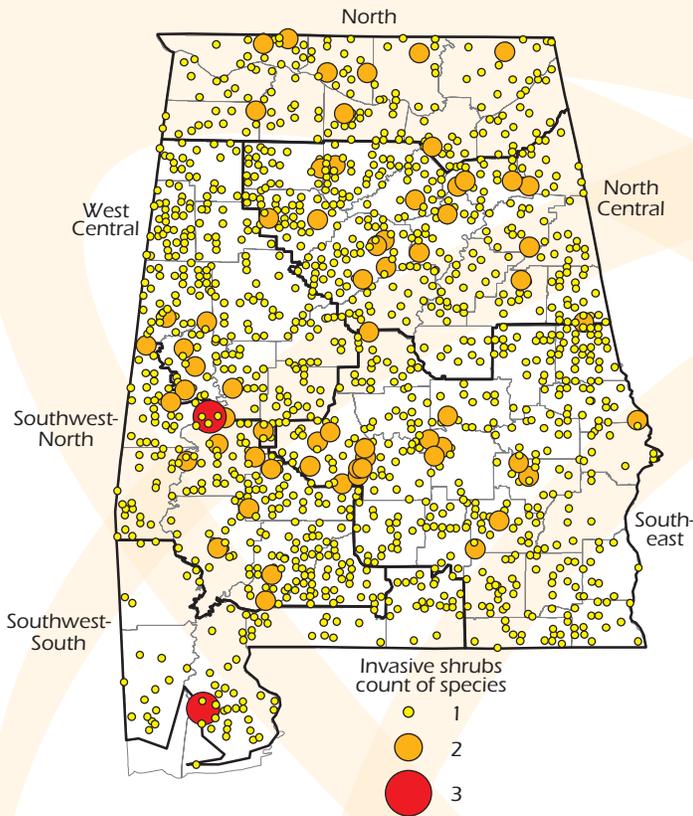


Figure 5—Number of invasive shrubs on plots, Alabama, 2009.

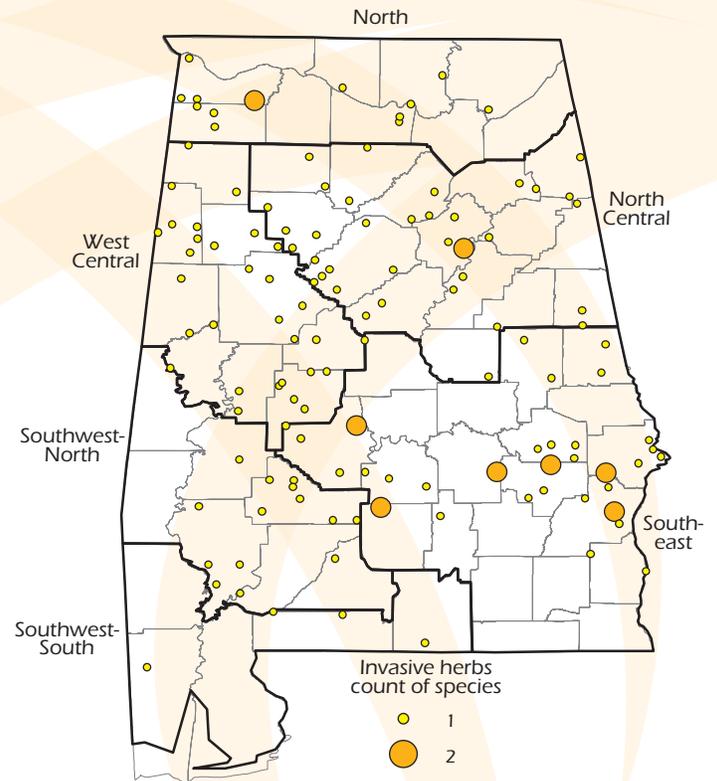


Figure 7—Number of invasive herbs on plots, Alabama, 2009.

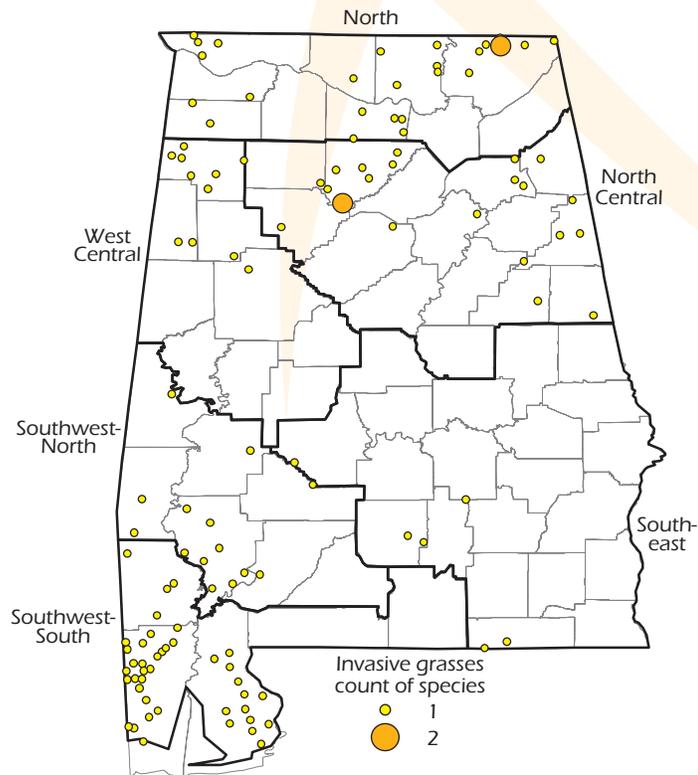


Figure 6—Number of invasive grasses on plots, Alabama, 2009.

and consisted primarily of shrubby and Chinese lespedeza. The Southeast unit, however was to be found to have a greater number of plots with two invasive herbs observed.

Nonnative invasive herbs species were observed throughout the State (fig. 7), however appeared to be least frequent in the Southwest-South FIA unit. Japanese climbing fern was found

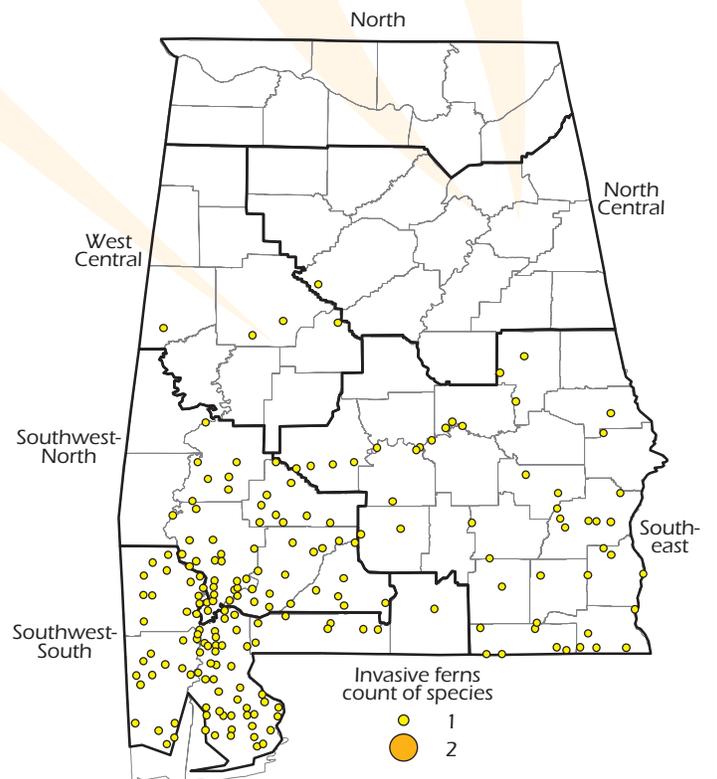


Figure 8—Number of invasive ferns on plots, Alabama, 2009.

primarily in the three most southern FIA units (fig. 8) and was observed on about 16 percent of forested plots surveyed in the Southwest-South unit which contains the Mobile Bay and large portions of the Mobile and Tensaw River basins.

**Conclusions**

Invasive species are common on forested plots across the State of Alabama. The prevalence of invasive plants on Alabama forest land illustrates the need for public education regarding the ecological and economic costs of invasive plants, and the need for prioritized control and management efforts for invasive plants. While control may be difficult for some widely spread species, managers can slow the spread of many species with targeted efforts to control minimally impacted forests and access points.

**FIA Program Information**

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**Additional Alabama Information**

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Japanese climbing fern. (photo by James H. Miller)

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