



Invasive Plants Found in east Texas Forests, 2008

FOREST INVENTORY & ANALYSIS FACTSHEET



Chinese privet. (photo by James H. Miller)

U.S. Department of Agriculture
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Introduction

This science update provides information on the presence and cover of nonnative invasive plants found in forests of the eastern region of the State of Texas 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 Texas Forest Service. 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 east Texas between 2003 and 2008 and provides illustrations of where invasive plants are being observed in forests across east Texas.

Findings

Invasive plants from the FIA watch list were found on 1,107 forested plots across the eastern portion of the State (49 percent of forested plots sampled). Invasive plants in the other regions of Texas are not covered in this report. Seventeen percent of plots contained two or more invasive plants from the list (table 1). Invasive plants were detected throughout east Texas, with invasives appearing in 44 percent of forested plots in the Southeast unit and 55 percent in the Northeast unit (fig. 1). Japanese honeysuckle (*Lonicera japonica*) was the most frequently detected plant on east Texas forest land, and was particularly common in the Northeast unit (table 2). Chinese tallowtree (*Triadica sebifera*)

Table 1—Number of invasive species detections on east Texas forest land, 2008, and the number and percent of plots on which they occur

Unique species detections count	South-east -- number of plots --	North-east	Total	Surveyed plots ^a percent
1	377	364	741	33
2	113	148	261	12
3	53	35	88	4
4	14	2	16	1
5	1	—	1	0
Total	558	549	1,107	49

^a Percent of survey plots out of 2,258.

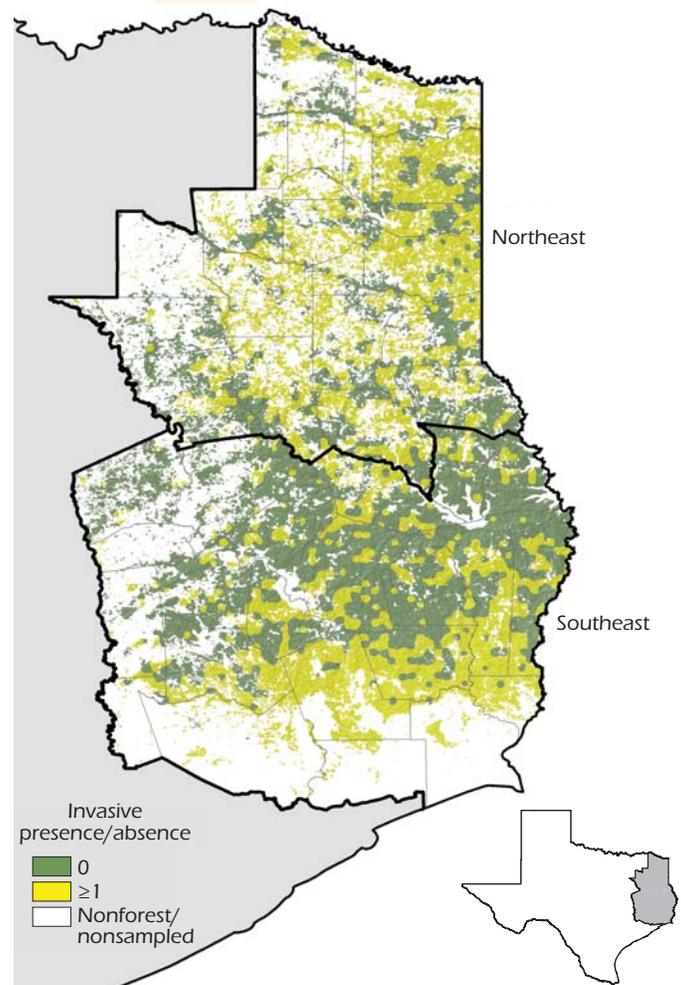


Figure 1—Presence/absence of invasive species on east Texas forest land, 2008.

Table 2—Invasive species detected on east Texas forest land with frequency of plot detections and mean percent subplot cover by survey unit, 2008

Common name	Scientific name	Survey unit			Survey unit			
		Plot detections ^a		Total	Mean subplot cover ^b		Total	
		South-east	North-east		South-east	North-east		
			----- number -----			----- percent -----		
Silktree, Mimosa	<i>Albizia julibrissin</i>	12	27	39	8	2	4	
Chinaberry	<i>Melia azedarach</i>	33	20	53	15	2	10	
Tallowtree, Popcorn tree	<i>Triadica sebifera</i>	358	34	392	21	5	20	
Chinese/European privet	<i>Ligustrum sinense/L. vulgare</i>	75	177	252	15	9	11	
Japanese/glossy privet	<i>Ligustrum japonicum/L. lucidum</i>	20	3	23	23	5	20	
Bush honeysuckles	<i>Lonicera</i> spp.	9		9	11	—	11	
Sacred bamboo, Nandina	<i>Nandina domestica</i>	4	4	8	2	4	3	
Nonnative roses	<i>Rosa</i> spp.	4	18	22	16	2	4	
Nonnative climbing yams-air yam/Chinese yam	<i>Dioscorea bulbifera</i>	3		3	0	—	0	
English ivy	<i>Hedera helix</i>	1		1	5	—	5	
Japanese honeysuckle	<i>Lonicera japonica</i>	182	466	648	13	11	12	
Kudzu	<i>Pueraria Montana</i> var. <i>lobata</i>	—	1	1	—	0	0	
Chinese/Japanese wisteria	<i>Wisteria sinensis/W. floribunda</i>	—	2	2	—	30	30	
Giant reed	<i>Arundo donax</i>	—	1	1	—	0	0	
Tall fescue	<i>Lolium arundinaceum</i>	1	1	2	30	50	40	
Nonnative bamboos	<i>Phyllostachys</i> spp., <i>Bambus</i> spp.	1	1	2	14	30	22	
Japanese climbing fern	<i>Lygodium japonicum</i>	117	2	119	10	3	9	
Shrubby lespedeza	<i>Lespedeza bicolor</i>	2	8	10	3	3	3	
Chinese lespedeza	<i>Lespedeza cuneata</i>	1	8	9	5	4	4	

Total number of surveyed plots: Southeast = 1,263; Northeast = 995; Total = 2,258.

^a 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 here.

^b Percent cover in this column is the average cover on an individual subplot, not the whole plot.

Chinese tallowtree fruit. (photo by Chris Evans, River to River CWMA, Bugwood.org)



was the second most frequently detected invasive plant, and was most common in the Southeast unit, along the coast (table 2).

Invasive trees were more common in southeastern Texas (fig. 2). Chinese tallowtree was the most commonly detected tree species in both FIA units in east Texas, though it was far more common in the Southeast unit, and covered a larger percent of the subplots (table 2). Chinaberry (*Melia azedarach*) and Mimosa (*Albizia julibrissin*) were also detected on east Texas forest land, though both occurred on <5 percent of sampled plots (table 2).

Invasive shrubs were more commonly detected in northeastern Texas (fig. 3), though when found in the Southeast unit, they tended to cover a larger percent of the subplot (table 2). Chinese and European privets (*Ligustrum sinense* and *L. vulgare*, respectively) were the most common invasive shrubs, occurring on 11 percent of forested plots in

eastern Texas and 18 percent of plots in the Northeast unit (table 2). No other invasive shrub occurred on > 1 percent of sampled plots.

Japanese honeysuckle was the only invasive vine occurring on more than three sampled plots (table 2). Though it was detected across east Texas, it was more common in the Northeast unit (fig. 4), where it occurred on 21 percent of sampled plots (table 2). Japanese honeysuckle covered, on average, 12 percent of the area of subplots on which it was detected.

Nonnative herbs and grasses were found on only a handful of sampled plots in east Texas (fig. 5). Shrubby and Chinese lespedezas (*Lespedeza bicolor* and *L. cuneata*, respectively) were most common, though covered only a small aerial proportion of the subplots on which they were found (table 2).

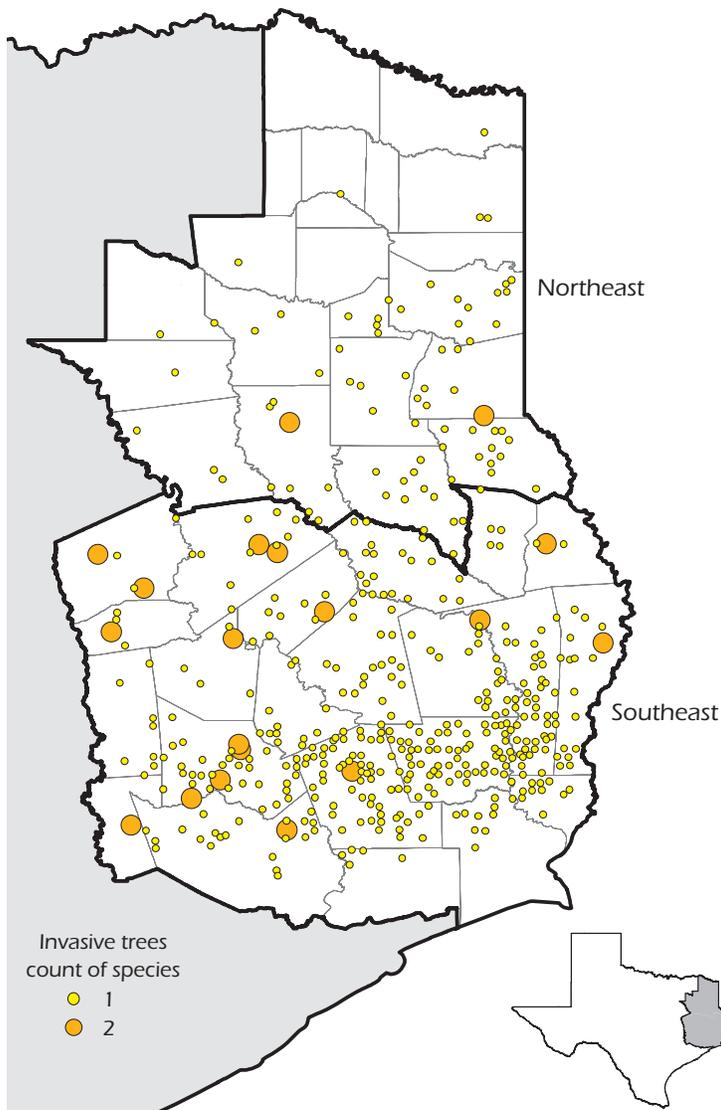


Figure 2—Number of invasive trees on plots, east Texas, 2008.

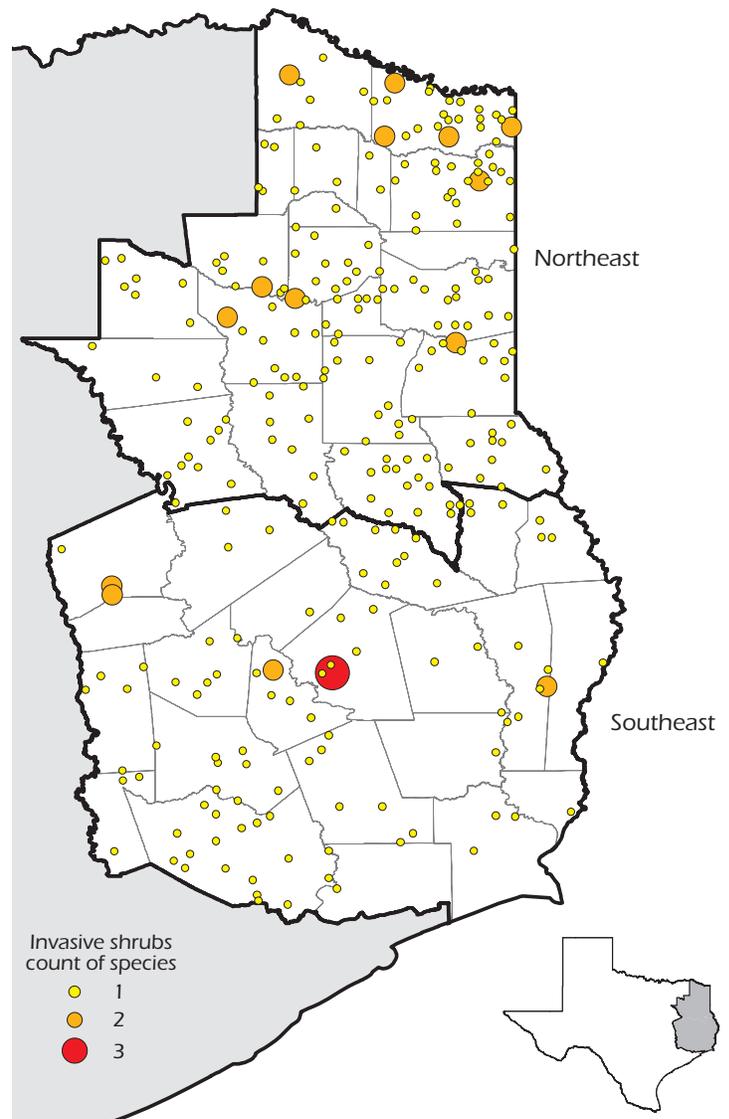


Figure 3—Number of invasive shrubs on plots, east Texas, 2008.

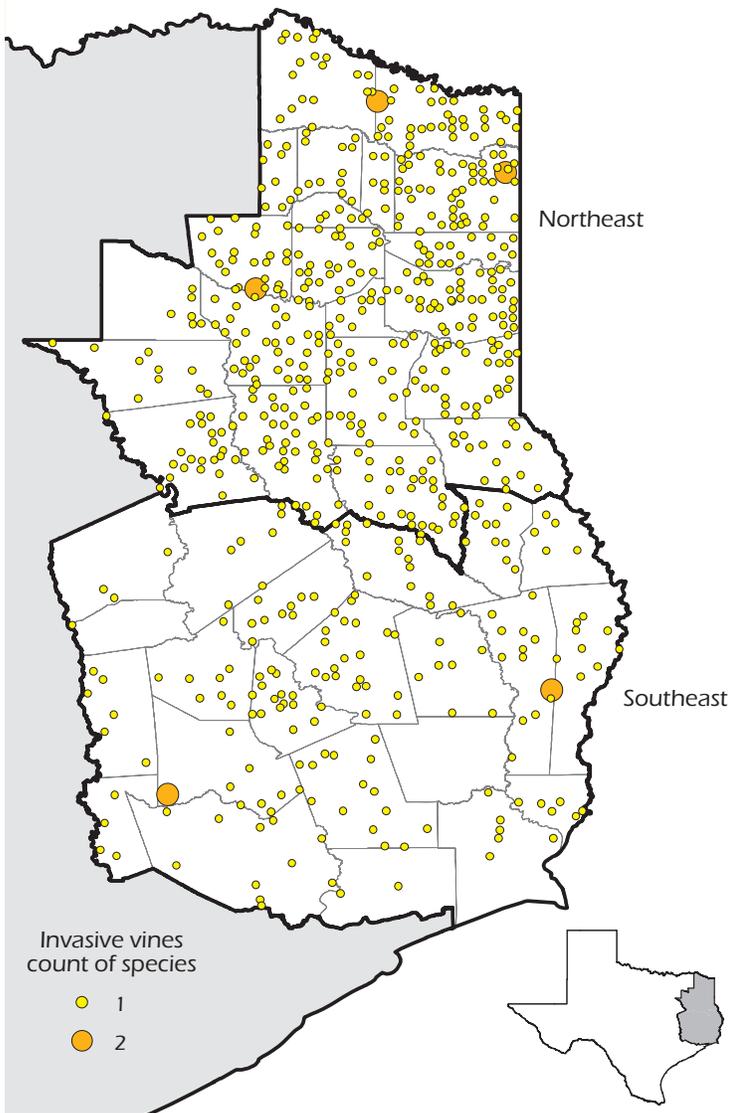


Figure 4—Number of invasive vines on plots, east Texas, 2008.

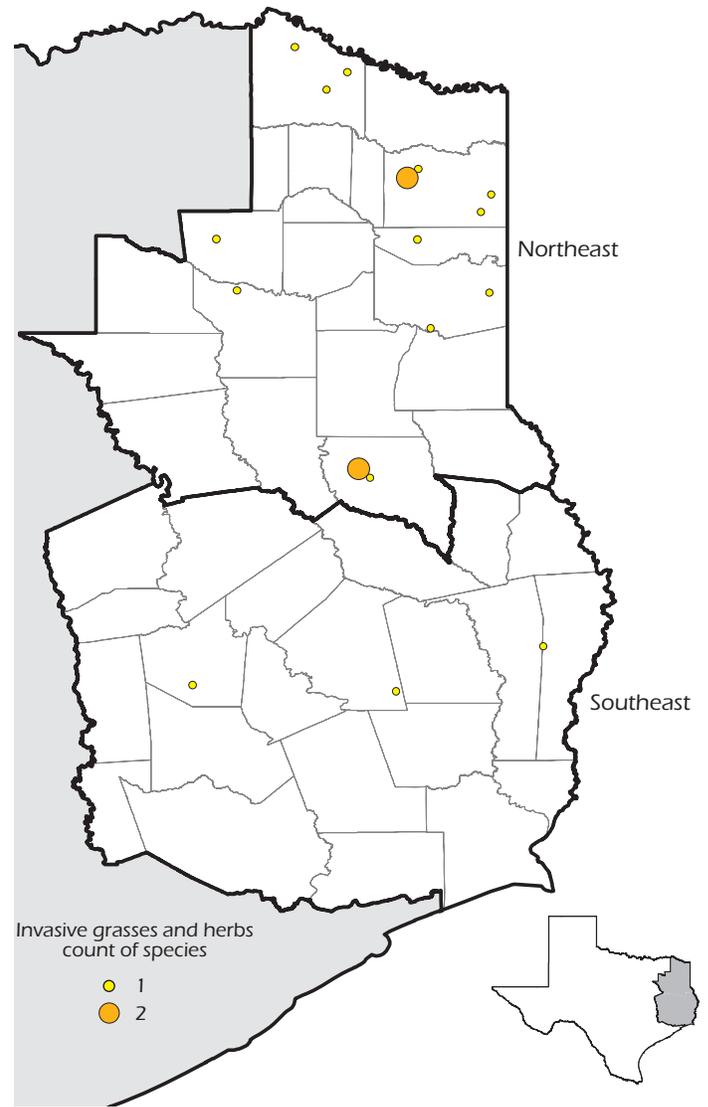


Figure 5—Number of invasive grasses and herbs on plots, east Texas, 2008.

Japanese climbing fern (*Lygodium japonicum*) occurred throughout the Southeast unit of east Texas on about 9 percent of plots surveyed in that region, and 5 percent of plots in both units combined (fig. 6). On subplots where it was found, it covered about 10 percent of the aerial proportion (table 2).

Conclusions

Invasive plants are common on nearly one-half of forested plots in east Texas. The prevalence of invasive plants in east Texas underscores the importance of public education

regarding the economic and ecological costs of invasive plants, and the need for management and control efforts. Chinese tallowtree and Japanese honeysuckle are particularly problematic in east Texas. Both species are capable of altering local environments through competition with native plants. Chinese tallowtree, in particular, is a threat to native wet prairies, replacing entire ecosystems with monoculture stands of the tree. The FIA nonnative invasive plant program provides a method for tracking the spread of common invasive plants across the landscape, and allows for a landscape-level approach to invasive species problem-solving.

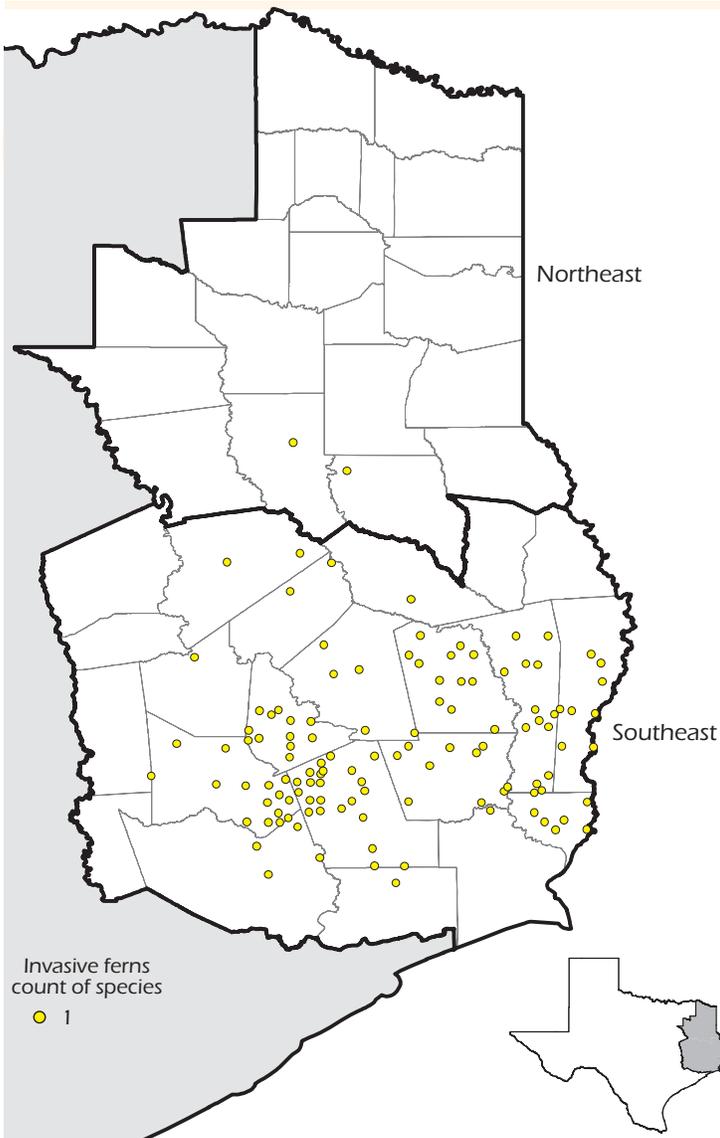


Figure 6—Number of invasive ferns on plots, east Texas, 2008.

FIA Program Information

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Chinese tallowtree twigs. (photo by Chris Evans, River to River CWMA, Bugwood.org)

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