

# Non-Native Invasive Plant Control Efforts

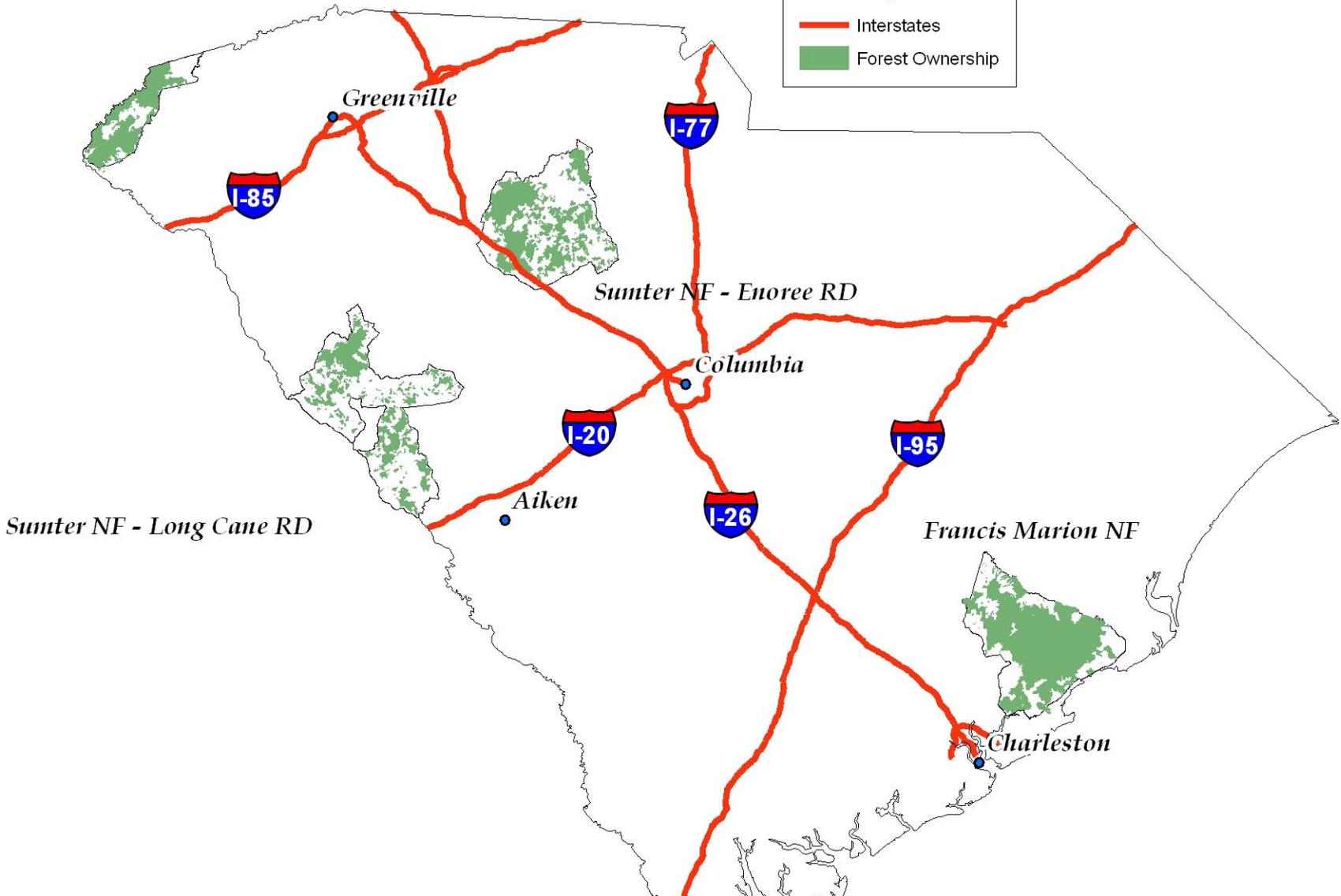
Francis Marion and Sumter  
National Forests  
South Carolina

# Francis Marion & Sumter National Forest

*Sumter NF - Andrew Pickens RD*

*Legend*

- Interstates
- Forest Ownership



*Sumter NF - Enoree RD*

*Sumter NF - Long Cane RD*

*Francis Marion NF*

*Greenville*

*Columbia*

*Aiken*

*Charleston*

**I-85**

**I-77**

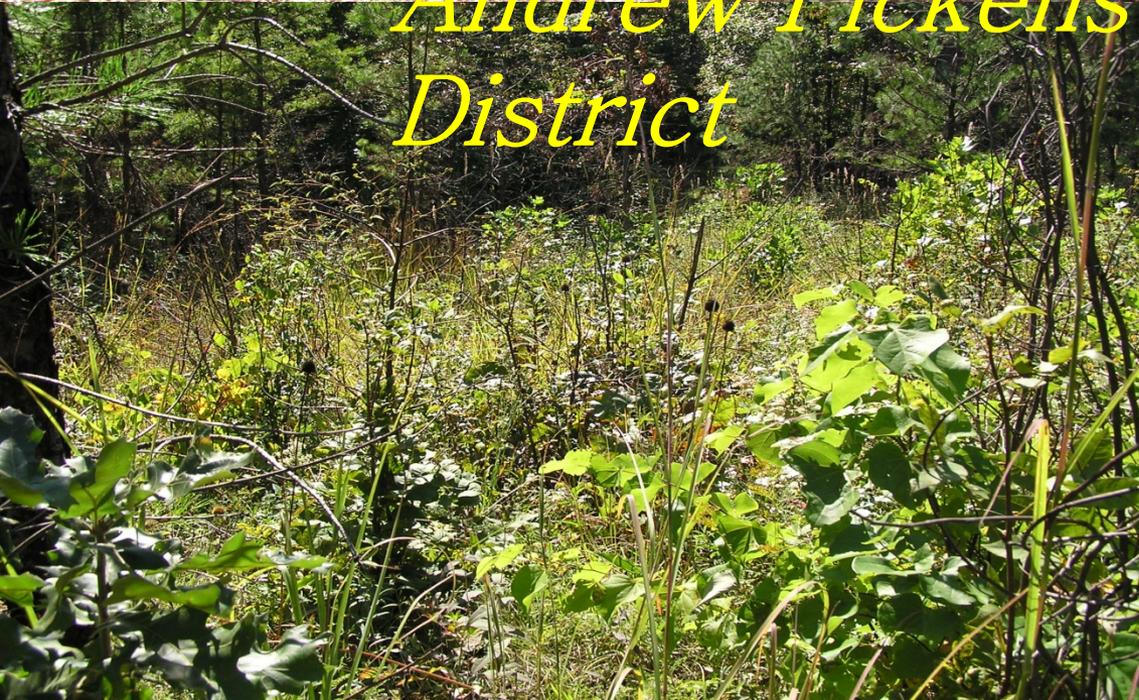
**I-20**

**I-95**

**I-26**



*Andrew Pickens Ranger District*

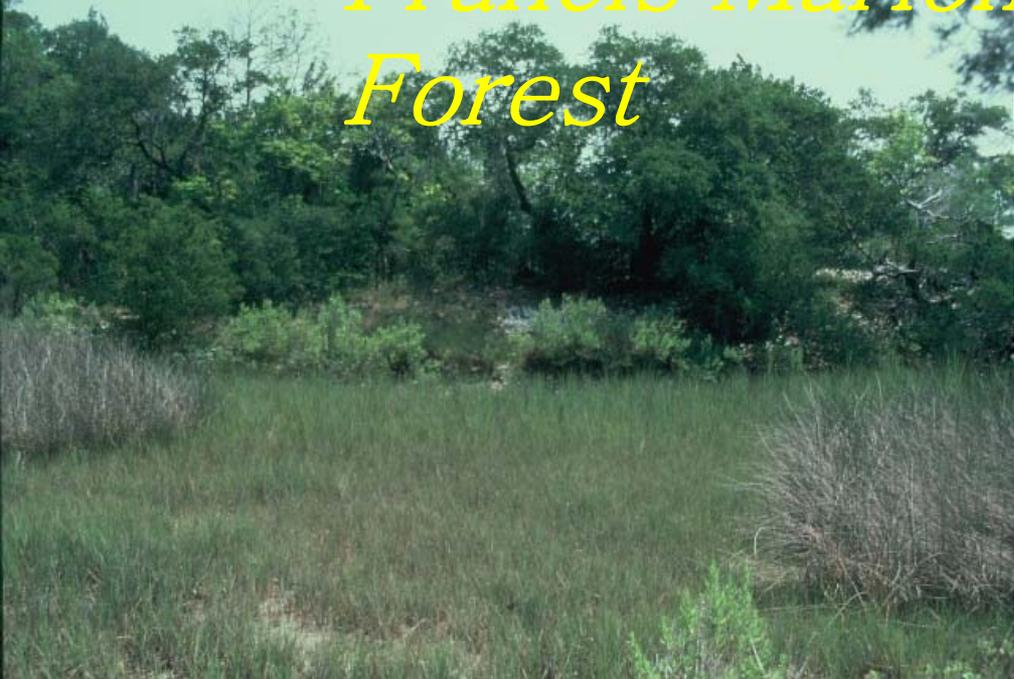




*Enoree and Long Cane Ranger Districts*



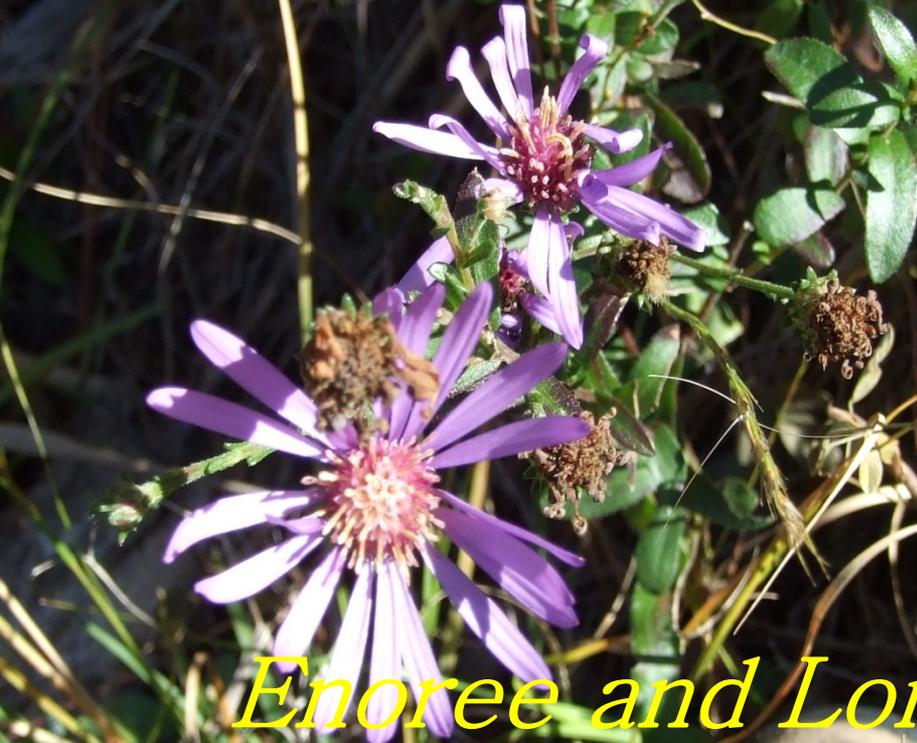
*Francis Marion National  
Forest*





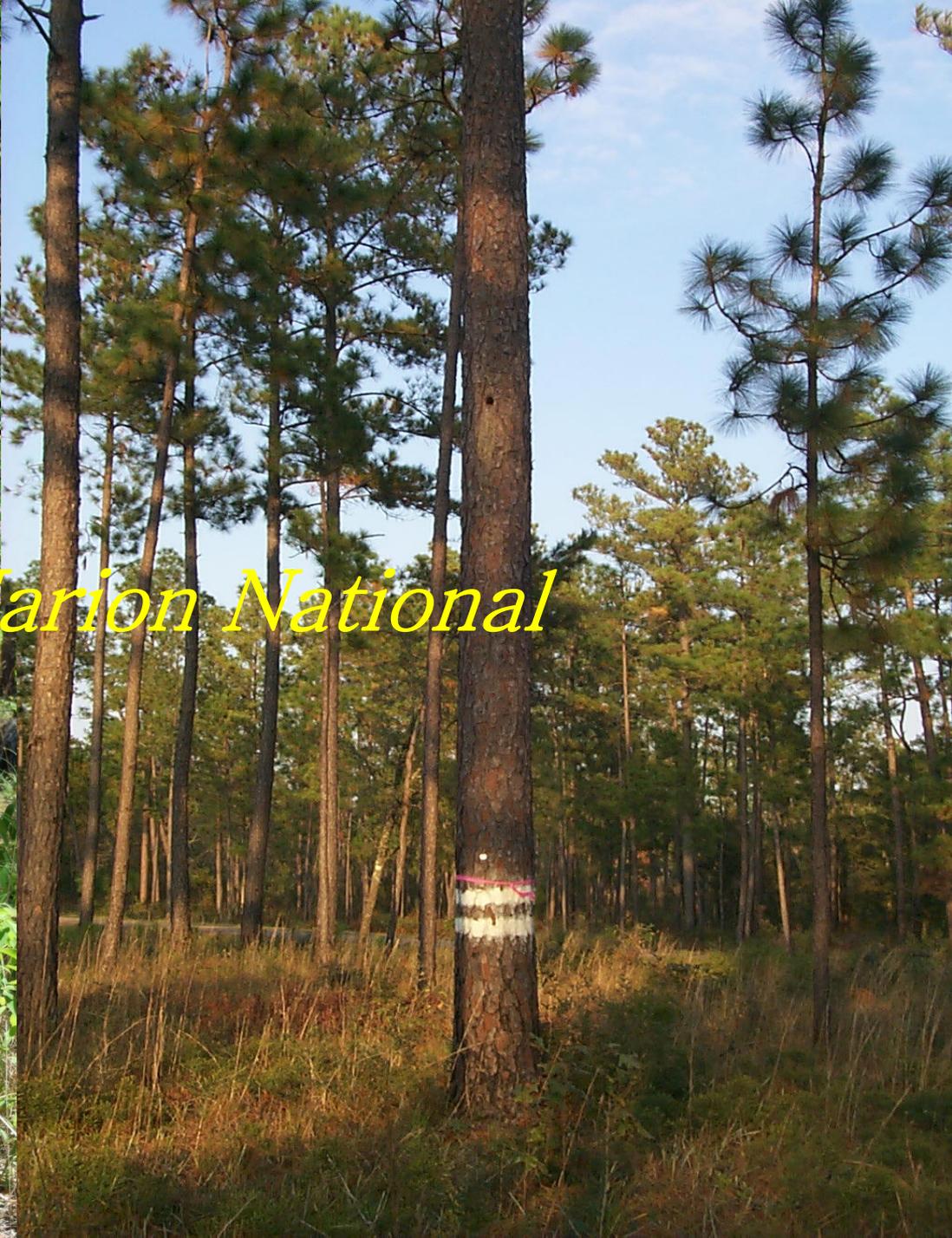
*Andrew Pickens Ranger District*





*Enoree and Long Cane Ranger  
Districts*





*Francis Marion National  
Forest*



# National Invasive Species Campaign

- Noxious Weed Act (1974); Replaced by Plant Protection Act (2000)
- Presidential Executive Order 13112 (1999)
  - directs all federal agencies to: (i) prevent the introduction and spread of invasive species, (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner, (iii) monitor invasive species populations reliably and accurately, (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded;...
- National Invasive Species Management Plan (2001)

# Adaptive Management NEPA Decisions

- Use an “implement–monitor–adapt” strategy that provides flexibility that allows for adopting findings from research studies on different practices or impacts, or changes in land or resource conditions. The adaptive strategy is key to finding and treating infestations that are not currently identified, and provides the flexibility to use the best method of treatment based on the results of monitoring and evaluation.

## Adaptive Management NEPA Decisions to treat invasive plant species on the Francis Marion and Sumter National Forest

- 2004 – Allowed for selective mechanical and chemical treatment methods, including the use of glyphosate, Garlon 3A, transline, and imazapic on up to 2500 acres on the Sumter NF
- 2004 – Allowed for selective mechanical and chemical treatment methods, including the use of glyphosate, Garlon 3A, imazapyr, and imazapic on up to 3000 acres on the FMNF;
- 2009 – Allowed for selective mechanical and chemical treatment methods, including the use of Escort, Garlon 4, Milestone, glyphosate, imazapyr, and imazapic on an additional 3000 acres on the Sumter NF.

Estimates of Forested Acres in SC covered in  
Nonnative Invasive Plants (compiled by Miller and  
Chambliss, based on FIA plot data)

Japanese honeysuckle	797,171
Chinese privet	211,787
Chinese lespedeza	70,780
Japanese stiltgrass	67,505
Japanese privet	21,567
Chinese wisteria	17,077
Kudzu	14,105
Chinese tallow	12,971
Autumn olive	10,734

# *Priorities for NNIS Prevention and Control on the Francis Marion and Sumter National Forests*

- 1 = Eradicate if found; not known to occur on National Forest land in SC;
- 2 = Eradicate whenever found; known to occur on National Forest land in SC;
- 3 = Control only in high priority areas or landscapes including sources of infestation to these high priority areas (including adjacent private land).

# *Highest Priority Areas for Control, Francis Marion and Sumter National Forests*

- Threatened, Endangered, and Sensitive Species Habitat
- Timber Sale Areas
- Recreation Areas (trails, facilities)
- Wild and Scenic River Corridors
- Ecological Restoration Areas
- Wildlife Openings



# South Carolina Early Detection and Rapid Response Target Species

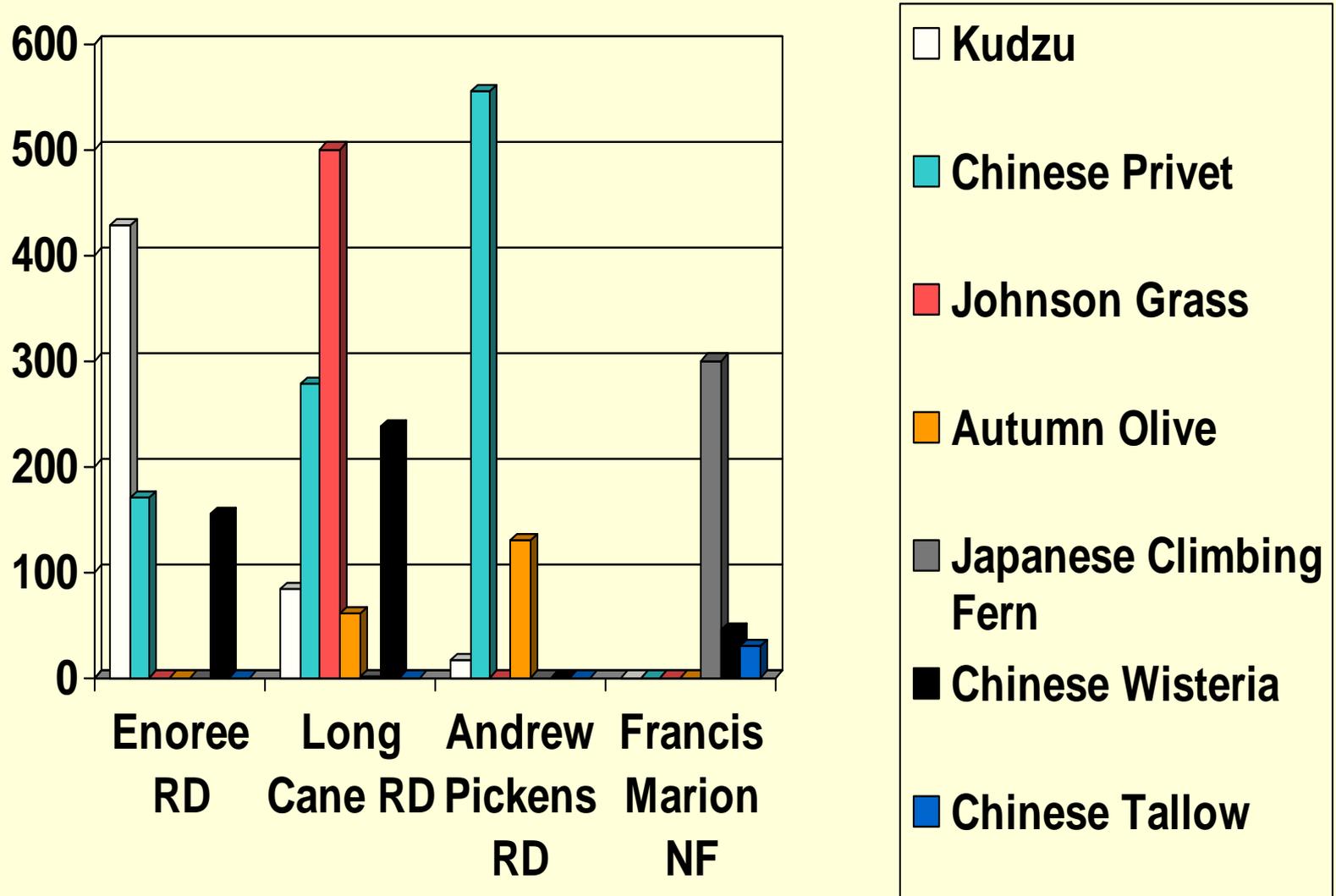
## Not known to occur in SC...

- Bengal Dayflower (*Commelina benghalensis*)
- Giant Hogweed (*Heracleum mantegazzianum*)
- Giant Salvinia (*Salvinia molesta*)
- Goatsrue (*Galega officinalis*)
- Japanese Dodder (*Cuscuta japonica*)
- Small Broomrape (*Orobanche minor*)
- Winged Euonymus (*Euonymus alatus*)
- Canada Thistle (*Cirsium arvense*)
- Chocolate Vine (*Akebia quinata*)
- Deeprooted Sedge (*Cyperus enterianus*)
- Garlic Mustard (*Alliaria petiolata*)
- Bushkiller (*Cayratia japonica*)
- Oriental Bittersweet (*Celastrus orbiculatus*)
- Old World Climbing Fern (*Lygodium microphyllum*)
- Purple Loosestrife (*Lythrum salicaria*)

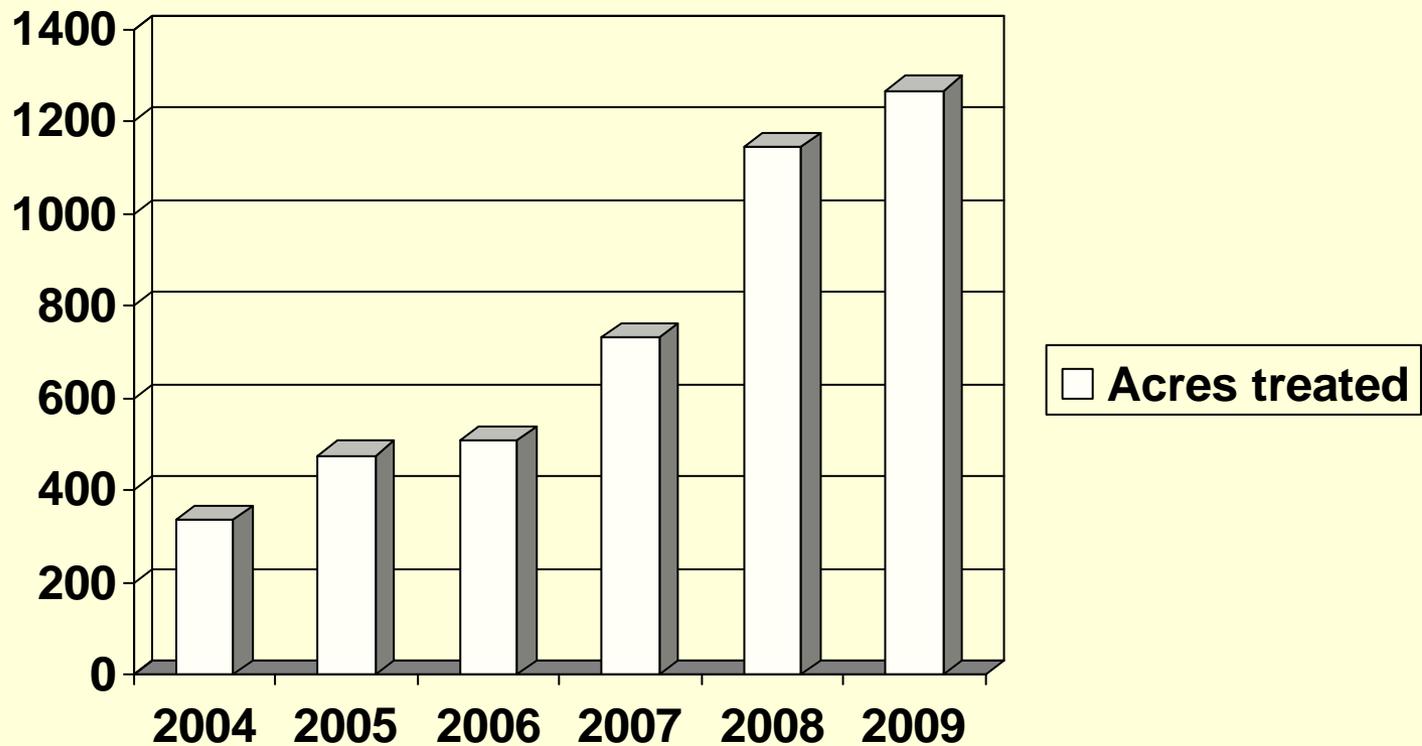
## Limited in SC...

- Cogongrass (*Imperata cylindrica*)
- Common Reed (*Phragmites australis*)
- Hydrilla (*Hydrilla verticillata*)
- Tropical Soda Apple (*Solanum viarum*)
- Witchweed (*Striga asiatica*)
- Beach Vitex (*Vitex rotundifolia*)
- Japanese knotweed (*Polygonum cuspidatum*)
- Saltcedar (*Tamarix sp.*)
- Japanese Climbing Fern (*Lygodium japonicum*)

# *Control efforts (acres) by District, Francis Marion and Sumter National Forests*



*Infested Acres treated , Non-Native  
Invasive Plants, Francis Marion and  
Sumter National Forests*



# Non-Native Invasive Plant Species treated, Francis Marion and Sumter National Forests, 2004-2008

- Sumter National Forest

Chinese Privet  
Kudzu  
Chinese Wisteria  
Chinaberry  
Chinese silvergrass  
Japanese honeysuckle  
Johnsongrass  
Japanese stiltgrass  
Periwinkle  
Nandina  
Tree-of-heaven  
English ivy  
Giant reed  
Chinese lespedeza  
Autumn olive  
Tall fescue  
Japanese climbing fern  
Royal paulownia

- Francis Marion National Forest

Cogongrass  
Japanese climbing fern  
Chinese tallow  
Common reed (*Phragmites*)  
Chinese wisteria  
Japanese honeysuckle

A photograph showing a dense thicket of Chinese Privet (Ligustrum sinense) bushes along a creek bank. The bushes are lush green and cover the majority of the frame. In the foreground, there is a small stream of water with some fallen sticks and debris. The background shows more dense vegetation and trees.

*Chinese Privet (Ligustrum sinense)*  
Turkey Creek, Long Cane Ranger District

4/6/2000



*Chinese Privet Treatments, 2004,  
Long Cane Ranger District, Sumter  
National Forest*



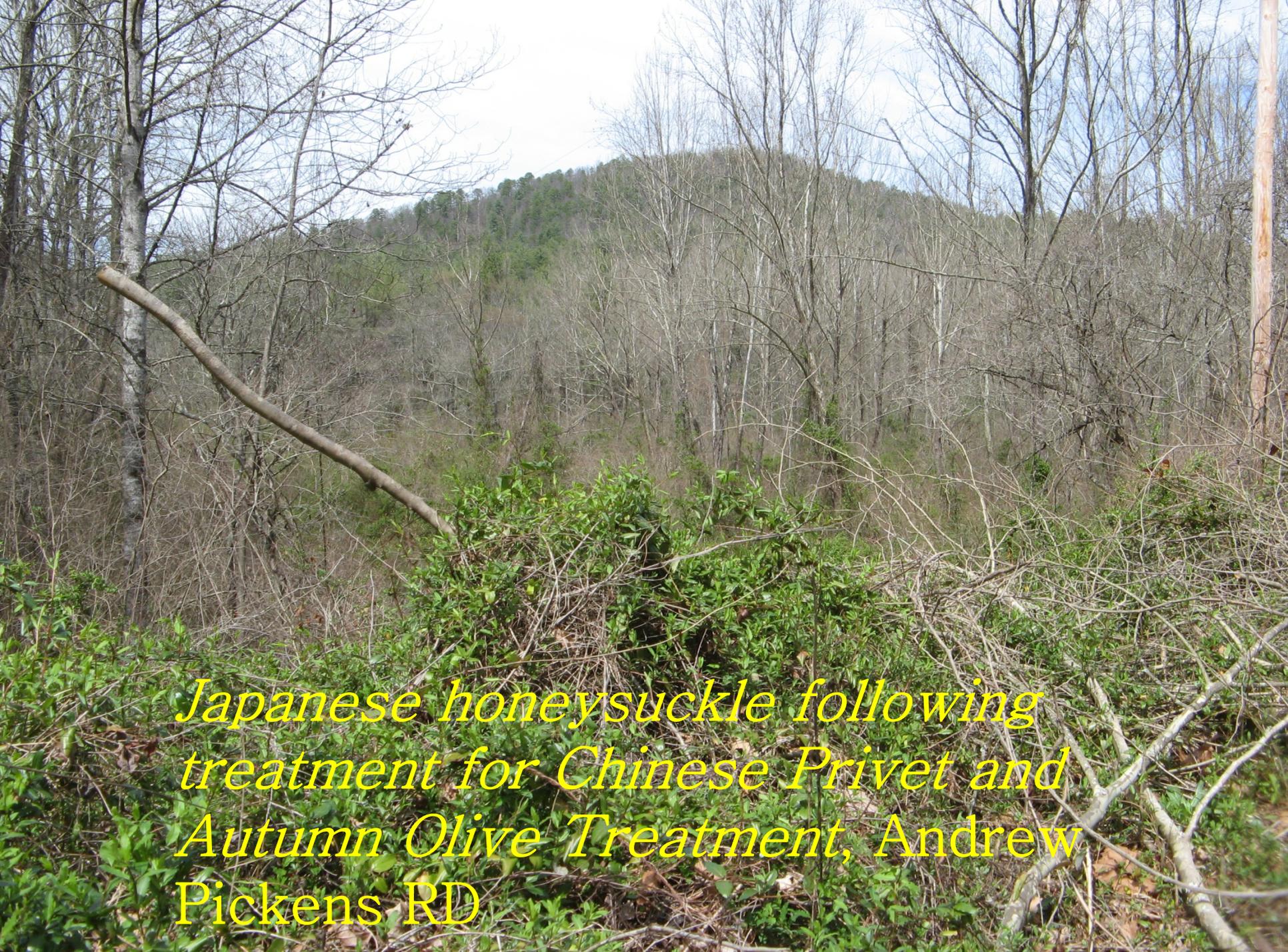
*Chinese Privet Control, Garland Tract  
Andrew Pickens District, Sumter National  
Forest*

A landscape photograph showing a field of tall, dry, brown grasses in the foreground. In the middle ground, there is a line of trees, including several tall, thin evergreens and some bare deciduous trees. The background features a range of low mountains under a bright blue sky with wispy white clouds. The overall scene is a natural, open landscape.

*Garland Tract, Andrew Pickens District,  
Sumter National Forest*

## Monitoring results after one year of treatment of Chinese privet, Sumter National Forest ..

- *Good control on Long Cane site, 74% decline in the number of Chinese privet stems; increase in native cane, river oats, wood-nettle, and Japanese honeysuckle;*
- *Excellent control on Garland tract, >95% decline in the number of Chinese privet stems, maintained by prescribed burning;*
- *In the absence of fire, multiple treatments are necessary;*
- *Prescribed fire is an effective tool achieving control.*



*Japanese honeysuckle following  
treatment for Chinese Privet and  
Autumn Olive Treatment, Andrew  
Pickens RD*



Tall Fescue, Chattooga Wild and  
Scenic River Corridor, Sumter  
National Forest



*Kudzu Infestation, Enoree Ranger District  
Sumter National Forest*

10/24/2005

# Monitoring results after three years of treating kudzu, Sumter National Forest ..

- *Good control (76–90% efficacy) on majority of acres; excellent control (over 95% of the target species has been killed) on only 17% of acres treated;*
- *Increase in the incidence of other non-native invasive species, particularly tree-of-heaven, Chinaberry, and Japanese honeysuckle;*
- *In the absence of fire, multiple treatments are necessary;*
- *Alternative methods and herbicides are being explored.*



Kudzu Coalition, Student Conservation Association, and Sumter National Forest



Chinese Wisteria (*Wisteria sinensis*)

Photo by Ted Bodner, Weed Science Society

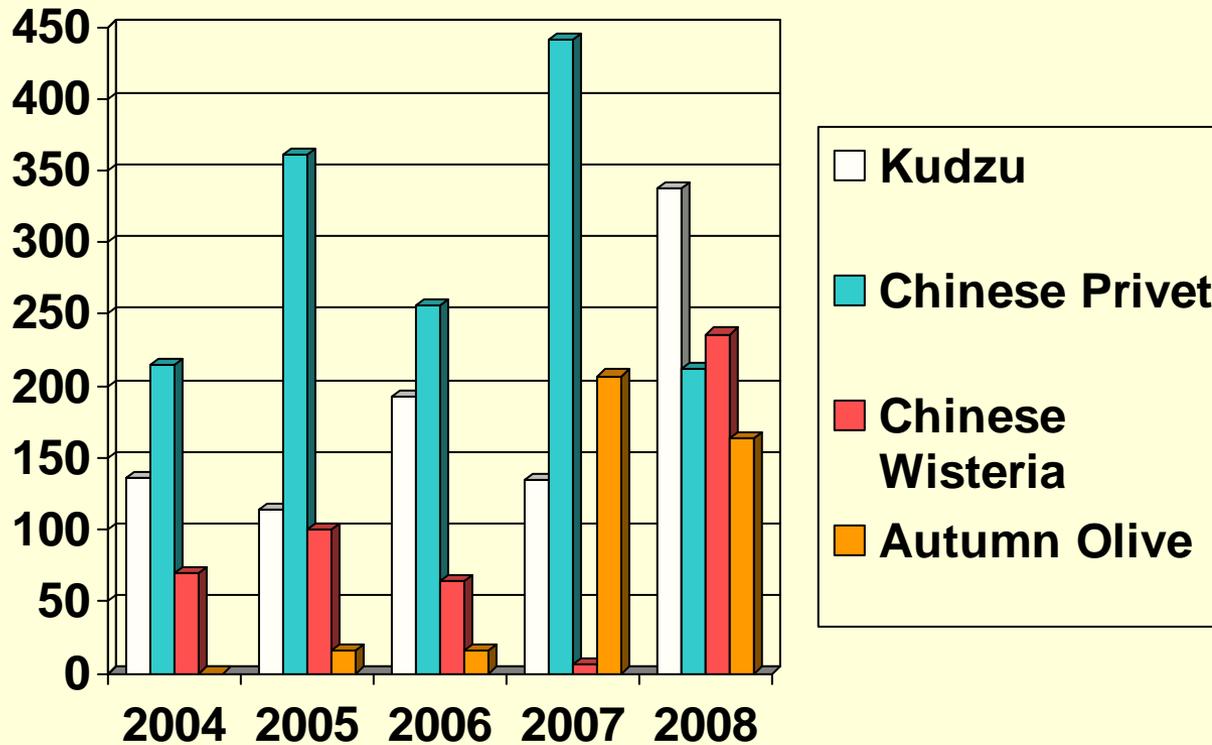
UGA0016139

# Autumn Olive – *Elaeagnus umbellata*

Photos by James Allison,  
GA DNR, and Jim Miller,  
USDA



# *Non-Native Invasive Species treated, Sumter National Forest*





Francis Marion National  
Forest

5/9/2000



*Cogongrass Infestation* on the Francis Marion NF,  
following initial herbicide treatment (2007)

# Cogongrass Task Force in South Carolina



UGA2307195



UGA2734037



Japanese Climbing Fern (*Lygodium japonicum*) Treatment, Francis Marion National Forest



UGA2307225



UGA0016176



UGA2307223



*Japanese Climbing Fern Infestation,*  
Francis Marion National Forest



**UGA0016032**

# Chinese Tallow Tree

(*Triadica sebifera*)



**UGA0016034**

Photos compliments of UGA @bugwood.org;  
Ted Booker from the Southern Weed Science  
Society and Jim Miller, USDA Forest Service



Photos compliments of Cheryl McCormick, UGA and Ted Bodner, Southern Weed Science Society

Common Reed –  
*Phragmites australis*



UGA1237064



UGA0016216

Photos by Jim Miller, USDA Forest Service and  
Joe McCauley, USFWS

# The Wyden Amendment (Public Law 105-277, Section 323 as amended by Public Law 109-54, Section 434)

- Authorizes the Forest Service to enter into cooperative agreements with willing Federal, Tribal, State, and local governments, private and nonprofit entities, and landowners to conduct activities on public or private lands for the following purposes:
- Protection, restoration, and enhancement of fish and wildlife habitat and other resources,
- Reduction of risk for natural disaster where public safety is threatened, or
- A combination of both.
- This authority was initially provided in FY 1998 and has been extended through the end of FY 2011.