

# Invasive Plant Pest Species of South Carolina

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Invasive, or exotic pest plant species are a growing problem in South Carolina. Nonnative plant invasions can be seen in natural areas, croplands, rangelands, pastures, forests, wetlands and waterways, wilderness areas, parks and refuges, and highway rights-of-way. Not all non-native plants are invasive. In fact, a large number of our agricultural crops and ornamental plants are non-native (exotic) in origin. Exotic plants are only a problem when they escape cultivation, spread rapidly and aggressively compete with native species. Invasive plant populations can grow, adapt, multiply, and spread to unmanageable levels, often overwhelming entire landscapes. Invasives significantly reduce plant biodiversity and can be a severe threat to stability and sustainability of ecosystems.

Management of invasive, nonnative plant species is difficult and complex. It is estimated that 100 million acres in the United States are already impacted by invasive plant species. Preventing further spread of invasive plants and recapturing impacted sites is a monumental task that depends on public awareness, support, and participation. This brochure shows and describes some of our worst invasive plants as determined by the South Carolina Exotic Pest Plant Council (SC-EPPC). Additional invasive species that presently degrade and potentially threaten South Carolina's natural communities are listed at the end of the brochure.

## What can you do to help?

- Many invasive plants are still sold commercially. If you see them at ornamental nurseries or elsewhere, do not purchase or plant them in your yard.
- Inform others of the problems created by invasive species.
- Replace established invasive plants with alternative native species. More detailed information on alternatives can be obtained from the South Carolina Native Plant Society home page: [www.scnps.org/](http://www.scnps.org/)
- Other good sources of information include the Clemson Cooperative Extension Service ([www.clemson.edu/public](http://www.clemson.edu/public)) and The Bugwood Network ([www.bugwood.org](http://www.bugwood.org)).
- For eradication guidelines and assistance in locating contractors to conduct this work contact the Clemson Cooperative Extension Service or The Department of Plant Industry. ([http://dpi.clemson.edu/PI\\_index.htm](http://dpi.clemson.edu/PI_index.htm))
- Become an active member of the South Carolina Exotic Pest Plant Council. Mail completed form and check (made payable to SC-EPPC) to: South Carolina Exotic Pest Plant Council, c/o Colette DeGarady, The Nature Conservancy-SC Chapter, 960 Morrison Drive, Suite 100, Charleston, SC 29403-3819. Please go to our webpage, [www.se-eppc.org/southcarolina/](http://www.se-eppc.org/southcarolina/) for a membership form.

*All photos in this brochure courtesy of Forestry Images.org*

# Chinese Tallow Tree

*Triadica sebifera* (L.) Small

- Introduced to South Carolina from China in the late 1700s.
- Deciduous tree that grows to 60 feet in height.
- Distinctive features include heart-shaped leaves that turn yellow to red in the fall and fruit that resembles popcorn.
- Fruit and seed are borne in terminal three-lobed clusters that split, revealing white wax coated seeds.
- Seeds are dispersed by birds and water.



James H. Miller, USDA Forest Service

- Vigorous regeneration along streams, flood plains and uplands is a hindrance to the establishment of natural plant species and to forest regeneration.



Ted Bodner, Southern Weed Science Society

# Autumn Olive

*Elaeagnus umbellata* Thunb.



James H. Miller, USDA Forest Service

- Prefers drier sites and is shade tolerant.
- Scattered trees in forest openings eventually form dense stands that grow at the expense of other species.

- Introduced from China and Japan in 1830 – Widely planted for wildlife habitat improvement.
- Deciduous bushy shrub that grows to 20 feet in height.
- Distinctive features are bright green leaves with silver undersides and production of many red berries in the fall.



James R. Allison, GA Dept. of Natural Resources

# Chinese Privet

*Ligustrum sinense* Lour.

- Introduced from China in the early to mid-1800's.
- Semi-evergreen, thicket forming shrub growing to 30 feet in height.

- Distinguishing features are the leaves that grow opposite in two rows at right angles to the stem, white flowers that grow in panicles, and small abundant fruit that range from green in summer to almost black in the fall.



Ted Bodner, Southern Weed Science Society

- Spreads by abundant bird and animal dispersal and root sprouts.

- Privet is shade tolerant and forms dense thickets particularly in bottomlands and along fencerows and rights-of-way.

- Very few plants are found growing beneath thick stands of privet.



Ted Bodner, Southern Weed Science Society

# Multiflora Rose

*Rosa multiflora* Thunb. ex Murr.



James H. Miller, USDA Forest Service

- Introduced from Asia and planted as an ornamental, as living fences for livestock containment and for wildlife habitat.
- Deciduous climbing, arching and or trailing shrubs that grow to 10 feet in height.
- Distinguishing features are the clustered white flowers with yellow anthers, pinnately compound leaves, sharp thorns and red rose hips in the fall.



James H. Miller, USDA Forest Service

- Spreads by rooting stems, sprouts and seed dispersal by animals.
- Forms small-to-large infestations that often climb trees. Thickets exclude other desirable plant species and hinder site management.

# Beach Vitex

*Vitex rotundifolia* L. f.

- Introduced from Korea in the mid 1980's as an ornamental and for dune stabilization. It has failed to stabilize dunes instead having the opposite effect.
- A low-growing, sprawling shrub with purplish-blue blooms that spreads by runners up to 10 feet annually and can withstand salt spray and drought.



Randy Westbrook, US Geological Survey



Forest & Kim Starr, US Geological Survey

- Beach vitex is a prolific seed producer. Seeds are spread by animals, wind, and water.
  - Leaves are round, silvery, gray-green, and have a spicy fragrance.
  - Displaces native beach grasses and wildflowers, including rare species.
- Sea turtle hatchlings become entangled in the thick vegetation of Beach Vitex and perish before reaching the ocean.

# Japanese Honeysuckle

*Lonicera japonica* Thunb.

- Introduced from Japan in the 1800's and planted as an ornamental and as deer browse.
- Our most commonly occurring invasive plant.
- Semi-evergreen to evergreen woody vine that is high climbing and trailing to 80 feet.



Chuck Barger, University of Georgia



Chuck Barger, University of Georgia

- Distinguishing features include sweet, fragrant flowers, brown hairy stem that is fissured and sloughing with age, and green or black sphere-shaped berries.
  - Spreads by rooting at vine nodes and animal dispersal of seed.
- Overwhelming thickets replace native species on forest margins and rights-of-way.
  - Shade tolerant and can be a problem in understories.

# Kudzu

*Pueraria montana* (Lour.) Merr. var. *lobata* (Willd.)  
Maesen & S. M. Almeida

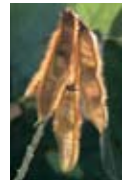


James H. Miller, USDA Forest Service

- Introduced from China and Japan in the early 1900's.
- Deciduous woody leguminous vine 30 to 100 feet long.
- Distinguishing features include three-leaflet leaves, yellow-green stems with erect golden hairs, lavender pea-like flowers, flattened and hairy seed pods.
- Colonizes by vines rooting at nodes and by wind-, animal-, and water-dispersed seeds. Seed viability is generally low.



David J. Moorhead, University of Georgia



Ted Bodner, Southern Weed Science Society

- Rapid and dense growth completely overwhelms all other plant species including large trees. Must have direct sunlight for rapid growth.

# Wisteria (Chinese and Japanese)

*Wisteria sinensis* (Sims) DC and *W. floribunda* (Wild) DC.

- Introduced from Asia in the early 1800's — traditional southern porch vine.
- Deciduous high climbing, twining, or trailing leguminous woody vine up to 70 feet long.



James H. Miller, USDA Forest Service

- Distinguishing features include showy, fragrant, lavender to violet pea-like flowers in spring, alternate, odd pinnately compound leaves and large, velvety leguminous pods.
- Spreads by rooting at nodes and water-dispersal of seeds.



Ted Bodner, Southern Weed Science Society

- Forms dense growth capable of killing trees and excluding other plant species.



Ted Bodner, Southern Weed Science Society

# English Ivy

*Hedera helix* L.



David J. Moorhead, University of Georgia

- Introduced from Europe in colonial times. Still widely planted as an ornamental.
- Evergreen, woody vine climbing to 90 feet by clinging aerial roots and trailing to form dense ground cover. Spreads vegetatively and by seed.
- Thick, dark-green leaves with whitish veins and 3 to 5 pointed lobes when juvenile. Matures in about 10 years into erect plants with unlobed leaves and terminal flower clusters.



Forest & Kim Starr, US Geological Survey

- Very adaptable, thrives in moist to dry areas and can tolerate shade.
- Amasses on infested trees, decreasing vigor and increasing chance of windthrow.
- Serves as a reservoir for bacterial leaf scorch that infects oaks, elms, and maples.
- Inhibits regeneration of native wildflowers, trees, and shrubs forming a monoculture.

# Cogongrass

*Imperata cylindrica* (L.) Beauv.



G. Keith Douce, University of Georgia

- Introduced from Asia in the early 1900's for erosion control and forage; and accidentally brought in as packing material in Alabama. Federally listed as a noxious weed.
- Grows clonally in circular patches and up to 5 feet tall.
- Sharp-pointed leaves  $\frac{1}{2}$ - $\frac{3}{4}$  inch wide with an off-center whitish midvein and finely serrated margins. Seed heads are long, fluffy, white, and are produced in the spring.



Chris Evans, University of Georgia

- Cogongrass can spread by rhizomes and stands become extremely dense, excluding native plants.
- Can withstand drought. Leaves that die out in the winter create a substantial fire hazard.
- Red Baron or Japanese Bloodgrass is a cultivar of Cogongrass that is prohibited by the Department of Plant Industry.

# Japanese Stiltgrass

*Microstegium vimineum* (Trin.) A Camus



Chuck Bargeron, University of Georgia

- Native to Asia and first identified near Knoxville, Tennessee in 1919.
- Sprawling annual grass growing to 3 feet in height.
- Prominent features – alternate, flat, two- to four-inch leaves and thin, spikelike flowers.



Ted Bodner, Southern Weed Science Society

- Prolific seeds remain viable for up to 3 years. Spreads by water and hitchhiking on animals and people.
- Will overtake and dominate sites on floodplains, streamsides, forest edges, roadsides, ditchbanks, trails, damp fields, swamps and lawns.

# Chinese Silvergrass

*Miscanthus sinensis* Andersson

- Introduced from eastern Asia. Still widely sold and planted as an ornamental.
- Tall, densely bunched, perennial grass, 5 to 10 feet tall. Long, narrow arching leaves less than 1.8 inches wide with whitish upper midveins.



James H. Miller, USDA Forest Service

- Many loosely plumed panicles in late summer turning silvery to pinkish in fall.
- Forms extensive infestations by escaping older ornamental plantings to roadsides, forest margins, and disturbed sites, especially after burning.
- Shade tolerant, highly flammable and a fire hazard.



Chris Evans, University of Georgia

# Common Reed

*Phragmites australis* (Cav.) Trin. ex Steud. var. *australis*



James R. Allison, GA Dept. of Natural Resources

- Origin is not clear. Species is found in Asia, Europe and North America.
- Clonal grass species with woody hollow culms that can grow up to 6 feet in height.
- Largely a weed of natural areas and presents a significant threat to biological diversity along Atlantic coastal areas.
- Especially common along railroad tracks, roadside ditches, and piles of dredge spoil; present primarily in coastal marshes.



Bernd Blosssey, Cornell University

- *Phragmites* invasions may threaten wildlife because they alter the structure and function of relatively diverse *Spartina* marshes

# Wart-Removing Herb

*Murdannia keisak* (Hassk.) Hand.-Maz.

- Originally associated with rice production in east Asia and likely was imported with rice to be used as seed in Louisiana and South Carolina. Earliest records of existence are from the 1920's.



Nancy Loewenstein, Auburn University

- Found in all coastal states from Delaware to Louisiana.
- Dispersal is by seed and from vegetative structures. Waterfowl favor seed as a food source and are a suspected vector.
- Has an aggressive ability to establish and take over wetlands and marshes at the exclusion of native plants.



Milo Pyne, USDA-NRCS Plants Database

# South Carolina Exotic Pest Plant Council Non-Native Invasive Plant Species List - 2008

## Definitions

**Severe threat:** Exotic invasive plant species which are known to pose a severe threat to the composition, structure, or function of natural areas in the state of South Carolina.

**Significant threat:** Exotic invasive plant species which are established in natural areas and are spreading independently, but have not been observed to alter South Carolina natural communities to the extent shown by “Severe Threat” species.

**Watch A:** Exotic plant species found in South Carolina, in limited infestations, that are a potential threat to natural areas. They exhibit invasive characteristics (high reproductive rate, high growth rate, establish new populations independently).

**Watch B:** Exotic plant species known to pose a severe threat to natural areas in adjacent states or in the southeast, but that are not currently recorded for South Carolina. These species are also on the Early Detection and Rapid Response (EDRR) list.

**Exotic:** A species or variety introduced to South Carolina, purposely or accidentally, from a natural range outside of South Carolina.

**Native:** A species whose natural range included South Carolina at the time of European contact (1500 AD).

**Distribution:** Area of known and probable occurrence. Distributions of species in the following list are based on maps of the South Carolina Plant Atlas, the SE-EPPC EDDMapS Database, and observations of local botanists.

## Goals/Purpose

1. To focus attention on the presence and adverse effects exotic invasive plants have on South Carolina’s biodiversity, natural communities, native plant and animal habitats, and rare species.
2. To rank exotic plants based on their invasive characteristics and observed distribution.
3. To foster early detection of invasive exotics so that control efforts can be implemented rapidly.
4. To aid resource managers and agencies in decisions about land management efforts toward controlling invasive exotic plants.
5. To increase public awareness of invasive exotic plant species in an effort to eliminate the use of invasive exotics in landscaping, restoration, and enhancement projects.

## Species List by Growth Form and by Severity of Threat

Distribution codes: M=mountains, P=piedmont, CP=coastal plain, All=All 3 regions, U=Unknown

### Trees

**Severe Threat:**

<i>Ailanthus altissima</i> , Tree of heaven ^ .....	All
<i>Albizia julibrissin</i> , Mimosa, Silktree .....	All
<i>Firmiana simplex</i> , Chinese Parasol Tree .....	MCP
<i>Melia azedarach</i> , Chinaberry .....	All
<i>Paulownia tomentosa</i> , Princess tree .....	All
<i>Triadica sebifera</i> , Chinese tallow tree ( <i>Sapium sebifera</i> in Atlas) .....	PCP

**Significant Threat :**

<i>Cinnamomum camphora</i> , Camphortree .....	CP
<i>Morus alba</i> , White Mulberry .....	All
<i>Populus alba</i> , White Poplar .....	All

**Watch A:**

<i>Broussonetia papyrifera</i> , Paper Mulberry .....	All
<i>Elaeagnus angustifolia</i> , Russian-olive .....	MP
<i>Pyrus calleryana</i> , Callery Pear (Bradford Pear) .....	MP
<i>Quercus acutissima</i> , Sawtooth Oak .....	PCP

## Shrubs

### Severe Threat:

<i>Elaeagnus pungens</i> , Thorny Olive.....	All
<i>Elaeagnus umbellata</i> , Autumn Olive.....	All
<i>Lespedeza bicolor</i> , Two Color Bush Clover, Shrub Lespedeza.....	All
<i>Ligustrum japonicum</i> , Japanese Privet.....	All
<i>Ligustrum sinensis</i> , Chinese Privet.....	All
<i>Polygonum cuspidatum</i> , Japanese Knotweed.....	All
<i>Rosa multiflora</i> , Multiflora Rose.....	All
<i>Vitex rotundifolia</i> , Beach Vitex, Chasteberry, Roundleaf Chastetree.....	CP

### Significant Threat:

<i>Cytisus scoparius</i> , Scotch Broom.....	All
<i>Mahonia bealei</i> , Leatherleaf Mahonia.....	PCP
<i>Mahonia nervosa</i> , Cascade Oregon Grape.....	P
<i>Nandina domestica</i> , Nandina, Sacred Bamboo.....	All
<i>Poncirus trifoliata</i> , Trifoliolate Orange.....	All
<i>Solanum pseudocapsicum</i> , Jerusalem Cherry.....	P

### Watch A:

<i>Berberis thunbergii</i> , Japanese Barberry.....	MP
<i>Lonicera fragrantissima</i> , Sweet Breath of Spring.....	All
<i>Rosa bracteata</i> , Macartney Rose.....	MP
<i>Rubus phoenicolasius</i> , Wineberry, Wine Raspberry.....	MP
<i>Spiraea japonica</i> , Meadowsweet.....	MP

### Watch B:

<i>Euonymus alata</i> , Winged Euonymus, Burning Bush.....	MP (probable)
<i>Tamarix ramosissima</i> , <i>T. parviflora</i> , <i>T. gallica</i> ; Saltcedar, Tamarisk, French Tamarisk.....	CP (planted)

## Vines

### Severe Threat:

<i>Hedera helix</i> , English Ivy.....	All
<i>Lygodium japonicum</i> , Japanese Climbing Fern.....	All
<i>Lonicera japonica</i> , Japanese Honeysuckle.....	All
<i>Pueraria montana var. lobata</i> , Kudzu.....	All
<i>Wisteria floribunda</i> , Asian/Japanese Wisteria.....	PCP
<i>Wisteria sinensis</i> , Chinese Wisteria.....	All
<i>Vinca major</i> , Bigleaf Periwinkle.....	All
<i>Vinca minor</i> , Common Periwinkle.....	MP

### Watch A:

<i>Clematis terniflora</i> , Sweet Autumn Virgin's Bower.....	All
<i>Coronilla varia</i> , Purple Crownvetch.....	MP
<i>Polygonum aubertii</i> , Lace vine, Silverlace vine, Fleece vine, Silvervine Fleeceflower, Chinese Fleeceflower.....	P
<i>Celastrus orbiculatus</i> , Asian/Oriental Bittersweet.....	All
<i>Cuscuta japonica</i> , Japanese Dodder*^.....	All
<i>Dioscorea oppositifolia</i> , Air potato, Chinese yam.....	All
<i>Euonymus fortunei</i> , Climbing Euonymus, Winter Creeper.....	P
<i>Rosa laevigata</i> , Cherokee Rose.....	PCP

### Watch B:

<i>Akebia quinata</i> , Fiveleaf akebia, chocolate vine.....	U
<i>Cayratia japonica</i> , Bushkiller.....	P(probable)

## Grasses, sedges

### Severe Threat:

<i>Imperata cylindrica</i> , Cogongrass* ^	MCP
<i>Lolium arundinaceus</i> , Tall Fescue	All
<i>Microstegium vimineum</i> , Japanese stilt grass, Nepalese Browntop	All
<i>Miscanthus sinensis</i> , Chinese Silvergrass	All
<i>Paspalum notatum</i> , Bahia Grass	All
<i>Phragmites australis</i> var. <i>australis</i> , Common reed, Phragmites ^	CP
<i>Phyllostachys aurea</i> , Golden Bamboo, Fishpole Bamboo	PCP
<i>Sorghum halepense</i> , Johnson Grass	All

### Significant Threat:

<i>Arundo donax</i> , Giant Reed	All
<i>Cortaderia selloana</i> , Pampas Grass	CP
<i>Paspalum dilatatum</i> , Dallis Grass	All
<i>Paspalum urvillei</i> , Vasey's Grass	PCP

### Watch A:

<i>Eragrostis curvula</i> , Weeping Love Grass	PCP
<i>Panicum repens</i> , Torpedo Grass	P

### Watch B:

<i>Cyperus entrianus</i> , Deep-rooted sedge	U
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## Herbs

### Severe Threat:

<i>Commelina bengalensis</i> , Tropical Spiderwort, Bengal Dayflower* ^	PCP
<i>Murdannia keisak</i> , Wart Removing Herb/Marsh Dewflower/Aneilema	All
<i>Solanum viarum</i> , Tropical Soda Apple ^	All

### Significant Threat:

<i>Carduus nutans</i> , Nodding Thistle, Nodding Plumeless Thistle, Musk Thistle	MP
<i>Centaurea biebersteinii</i> , Spotted Knapweed	P
<i>Cirsium vulgare</i> , Bull Thistle	All
<i>Crotalaria spectabilis</i> , Showy Rattlebox	All
<i>Daucus carota</i> , Queen Anne's Lace/Wild Carrot	All
<i>Lespedeza cuneata</i> , Serecea, Chinese Bush Clover	All
<i>Liriope muscari</i> , Liriope, Monkey Grass, Big Blue Lilyturf	PCP
<i>Sesbania punicea</i> , Rattlebox, Scarlet Wisteria Tree, Purple Sesban	PCP

### Watch A:

<i>Colocasia esculenta</i> , Elephant's Ear, Coco Yam, Taro	CP
<i>Crotalaria pallida</i> , Smooth Rattlebox	PCP
<i>Phyllanthus tenellus</i> , Mascarene Island Leafyflower	All
<i>Phyllanthus urinaria</i> , Leafyflower Shatterstone, Chamber Bitter	PCP
<i>Striga asiatica</i> , Witchweed*	CP

### Watch B:

<i>Alliaria petiolata</i> , Garlic Mustard	U
<i>Cirsium arvense</i> , Canada Thistle	U
<i>Lythrum salicaria</i> , Purple Loosestrife ^	U

\*species is on the Federal Noxious Weed list

^species is on the South Carolina Noxious Weed List

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