

A Homeowner's Guide to Preventing the Introduction and Spread of Invasive Plants in Georgia

*You Can Make a Difference
in Your Backyard*



“The two great destroyers of biodiversity are, first, habitat destruction and, second, invasion by exotic species.” E.O. Wilson



THE UNIVERSITY OF GEORGIA
**CENTER FOR INVASIVE SPECIES
AND
ECOSYSTEM HEALTH**

WARNELL SCHOOL OF
FORESTRY AND NATURAL RESOURCES

COLLEGE OF AGRICULTURAL
AND ENVIRONMENTAL SCIENCES

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Invasive plant list for Georgia is based on the Georgia Exotic Pest Plant Council's Invasive Plant List for 2011. Further details and the complete list can be found at www.ga-eppc.org.

Front Cover: Kudzu, the poster child of invasive plants eats yet another home. Photo credit Jerry Asher, USDI Bureau of Land Management, Bugwood.org

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All images can be found in the Bugwood Image Database System at images.bugwood.org.

Homeowners and other land managers can play a critical role in helping prevent the introduction and spread of invasive plants. No matter the size of our yard, we can have a direct impact on reducing the introduction of potentially invasive plants into nearby natural areas by simply choosing to plant native or non-invasive plants. These guidelines show how easy it can be to make a difference in your own backyard.

Plantwise Guidelines developed by The Lady Bird Johnson Wildflower Center

1. Know Your Plants
2. Use Native or Non-invasive Alternatives
3. Watch Out for Invasive Hitch-hikers
4. Have a Care if You Share
5. Use Weed Free Seed Mixes
6. Use Weed Free Soil & Mulch
7. Keep An Eye On New Sprouts & Volunteers
8. Be Especially Careful With Aquatic Plants
9. Dispose of Invasive Plants Carefully
10. If You Can't Part With Your Invasive Plant, remember – contain it, control it or cage it

“It is now within the power of individual gardeners to do something that we all dream of doing: to make a difference. In this case, the “difference” will be to the future of biodiversity, to the native plants and animals of North America and the ecosystems that sustain them.” Douglas W. Tallamy

Whether your perfect landscape and garden design is orderly and formal or wild and informal, you can benefit the ecosystem around you. For example, by choosing to plant one or more of the 60 species of oaks native to North America you can support over 500 species butterflies and moths as well as other wildlife including birds, deer and squirrels.

Invasive Tree Chinaberry



J. Miller, USFS

Native Tree Chinkapin Oak, grows to 60 ft. tall with a spread of 40-50 ft.



K. Rawlins, UGA

Native Wisteria



G. Todia, WREC

Non-native Wisteria



R. Wallace, Bugwood.org

Wildlife such as birds, raccoons and mice eat fruit and seeds from the plants around our homes. The animals then deposit the seeds later, sometimes many miles away, where they can sprout and grow in a new location. By using native or non-invasive plants for our landscaping we are making the choice to prevent further introduction and spread of invasive plants or potentially invasive plants.

Ask your local nursery for help in finding native plants for your landscape needs



K. Rawlins, UGA

Educate your local nursery about the dangers of invasive plants



K. Rawlins, UGA

Help educate local businesses about the dangers of planting invasive species. Tell nurseries you visit which are selling invasive plants or seeds about the dangers invasive species pose to our native habitats and wildlife. Let them know that you are choosing non-invasive and native plants for your landscaping. Business owners want to stock what consumers are buying and to be good members of their community. If your local nursery does not have the native plants you want in stock, ask if they will order the plants for you.

Native Strawberry bush



K. Rawlins, UGA

Invasive Winged burningbush



J. Miller, USFS

Check with your local Exotic Pest Plant Council, Native Plant Society, Botanical Society, Department of Natural Resources, Library or a reputable nursery near you for a list of native or non-invasive alternatives for your area. These organizations often have the recommended alternatives listed on their websites. For website addresses see page 24.

1. Know Your Plants

Which is native and which is invasive?



Find an identifying characteristic like the glandular notches in this photo.

This can make plant identification much easier. Smooth sumac, *Rhus glabra*, is pictured on the left and Tree of Heaven, *Ailanthus altissima*, is pictured

on the right. Invasive.org is a good source of invasive plant images and information.



Which is native and which is exotic?



These two plants are very similar and provide a good example of how well native plants can be used in place of non-natives in your landscape. Non-native Chaste tree, *Vitex agnus-castus*, on the left can escape and establish itself in natural areas. The native bottlebrush buckeye, *Aesculus parviflora*, can be grown as a spreading shrub or pruned to grow upright. It supports bumblebees, tiger swallowtail butterflies, Sphinx moths and ruby-throated hummingbirds.

2. Use Native or Non-Invasive Alternatives

Ask your nursery about non-invasive plant alternatives. Native plants often have similar landscaping characteristics to invasives, without the potential for ecosystem damage.

Gulf fritillary & Purple passionflower

R. Wallace, Bugwood.org



Monarch butterfly & Purple coneflower

S. Katovich, USFS



Using native plants in your landscaping promotes a healthier interactive local ecosystem and supports local food webs and habitats for wildlife.

Eastern bluebird enjoying an insect snack

O. Knott, GFC



Red-winged blackbird nest

J. Triana, Regional Water Authority



Plant as much variety of native and non-invasive trees, shrubs, vines, flowers and grasses as your space allows. Sources for lists of native and non-invasive alternatives for your garden and landscape include the Lady Bird Johnson Wildflower Center and the USDA United States National Arboretum. See page 24 for websites.

3. Watch Out for Invasive Hitch-hikers

Check clothes, belongings, pets and vehicles for seeds and pieces of invasive plants that may have attached themselves. These can drop off and begin growing to start an infestation in another location.



T. Pernas, NPS

Be wary of hitch-hikers

Clean equipment carefully to prevent spreading invasive seed or plant pieces into another area.



J. LaForest, UGA



USDA APHIS PPQ Archive

Never move firewood or untreated wood products!

America's forests are some of the most beautiful in the world. It is up to us to protect them. Pests such as the emerald ash borer which was found in the firewood below are quickly spread when people carry firewood or untreated wood products to new locations.



T. Kimoto, CFIA

Always use local firewood.

4. Have a Care if You Share

Only share native or non-invasive plants. Remember, buy native plants from a reputable supplier of nursery propagated stock. While some native plants are legitimately rescued from areas, such as active construction sites, many native plants are unethically dug from the wild to be sold.

Share a Native Plant with a Friend

Georgia aster



K. Rawlins, UGA

Trout lily

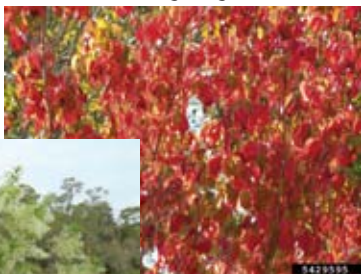


K. Rawlins, UGA

Harvesting native plants from the wild can reduce the populations, sometimes to the point of extinction and can actually be illegal. Native Plant Societies often have a list of reputable nurseries in their area. See page 24 for the Georgia Native Plant Society website address. Your local nursery may be able to order plants for you as well.

Learn which plants are native to your area

Flowering dogwood



K. Rawlins, UGA

White fringetree



R. Wallace, Bugwood.org

5. Use seed mixes that are invasive plant free

Buy seed mixes from reputable sources that guarantee the purity and content of their seed. Take your native plant list with you when go shopping to be sure the seeds you buy are native to your area.

Native Coral Honeysuckle



D. Moorhead, UGA

Invasive Japanese honeysuckle



C. Bargeron, UGA

6. Use weed-free soil, mulch & straw

Check to be sure soil and mulch are weed-free. You may have to pay a little more for guaranteed weed-free products, but it will be much less expensive than the price of eradicating an invasive plant infestation.

Invasive Japanese climbing fern in pine straw mulch



D. Teague, U.S. Air Force

Invasive Japanese climbing fern in potting soil



D. Moorhead, UGA

Buyer Beware!



D. Moorhead, UGA

7. Keep an eye on new sprouts & volunteers

Invasive plants can come from anywhere and spread very quickly. Some make attractive additions to our gardens but can produce a lot of seedlings making control difficult. Control new sprouts by hand-pulling or mowing unwanted seedlings to prevent them from growing to maturity.

Saplings, seedlings, sprouts

Tree-of-heaven

L. Mehrhoff, UCONN



Kudzu

N. Fraley, NPS



Chinese privet

J. Miller, USFS



Tallowtree

J. LaForest, UGA



Invasive plants are usually good at taking advantage of landscape disturbances. Be especially watchful for invasive plants sprouting up in newly disturbed soil such as ground tilled for a vegetable or flower garden. Construction areas where the soil is disturbed is another area to be on the lookout for new sprouts. Pulling or treating these invasive plant sprouts quickly before they become established is the easiest and most cost effective way to manage them. See www.invasive.org for control and management information on many invasive species.

8. Be especially careful with aquatic plants

Always dispose of aquatic plants carefully! Many aquatic plants, although attractive as water garden and aquarium decorations, are highly invasive.

Invasive Aquatics

alligatorweed



R. Wallace, Bugwood.org

wild taro



F. & K. Starr, Starr Environmental

Many continue to be sold through aquarium and pond supply dealers, both online and in retail garden centers. Infestations are often the result of the improper disposal of plants or water from ornamental ponds or the overflow of ponds into local waterways after heavy rains.

Hydrilla or waterthyme



D. Moorhead, UGA

Common water hyacinth



F. & K. Starr, U.S. Geological Survey

Invasive aquatic plants, often thrive in slow moving water such as ponds, lakes, swamps and irrigation canals. These dense colonies of aquatic plants can clog waterways and make fishing, swimming and boating difficult. They also reduce the amount of oxygen in the water, which fish and other organisms need to survive, block animals from getting to the water and crowd or shade out native plants.

Native Aquatic Plants

broadleaf arrowhead

G. Lovell, AL DCNR



American lotus

K. Rawlins, UGA



pickerelweed

C. Evans, River to River CWMA



water hyssop

F. & K. Starr, U.S. Geological Survey



goldenclub

C. Evans, River to River CWMA



fragrant waterlily

J. LaForest, UGA



9. Dispose of invasive plants carefully

When disposing of invasive plant material, check for any seeds, fruit or cuttings that could re-sprout. At a minimum, bag these materials to help stop their spread. If it is permitted in your area and can be safely done, consider burning the material. If you use chemical treatment to eradicate invasive plants be sure to follow all label directions.



A. Kooser, ISA

Invasive plants parts such as seeds, fruit or cuttings may resprout unless composted properly

When possible safely burn invasive plant material



D. Moorhead, UGA



S. Dewey, USU

Invasive plant material may resprout if left uncontained



C. Evans, River to River CISMA

Contain It or Treat It*
**always follow label directions*



S. Dewey, USU

10. If you just can't part with your invasive plant, remember to contain, control or cage it

Be responsible. If you have a plant in your garden that has invasive tendencies, take special steps to keep it in your garden, such as inserting root barriers, trimming regularly or harvesting fruits or seeds before they can be spread.

Remove flowers after blooming, before fruits or seeds develop



J. Allison, GA DNR

Prune or trim regularly to prevent unwanted growth



R. Webb, Bugwood.org

Use pots or root barriers to prevent rhizomes or suckers from sprouting outside the planting area. Pull any sprouts to prevent them from spreading and becoming established.

Monitor for invasive seedling volunteers



J. Miller, USFS

Plant it in a pot to contain it



F. & K. Starr, Starr Environmental

Invasive Plants in Georgia

The invasive plants shown here are based on GA-EPPC's list of Invasive plants. These plants have been categorized as being a severe, an emerging or a significant threat to Georgia's natural areas and forests. For more information and to see the complete list go to www.GA-EPPC.org.

Severe or Emerging Threat

Japanese chaff flower
Achyranthes japonica



C. Evans, River to River CWMA

Non-native wisterias
Wisteria spp.



R. Wallace, Bugwood.org

multiflora rose
Rosa multiflora



J. Miller, USFS

cogongrass
Imperata cylindrica



R. Wallace, Bugwood.org

kudzu
Pueraria montana var. *lobata*



D. Moorhead, UGA

princesstree
Paulownia tomentosa



C. Barger, UGA

oriental bittersweet
Celastrus orbiculatus



J. Allison, GA DNR

tree-of-heaven
Ailanthus altissima



C. Barger, UGA

Invasive Plants in Georgia: Severe or Emerging Threat

garlic mustard
Alliaria petiolata



Chinese yam
Dioscorea polystachya



alligatorweed
Alternanthera philoxeroides



waterhyacinth
Eichhornia crassipes



small carpgrass /hairy jointgrass
Arthraxon hispidus



English ivy
Hedera helix



Chinese privet
Ligustrum sinense



Japanese honeysuckle
Lonicera japonica



Japanese climbing fern
Lygodium japonicum



Chinese tallowtree
Triadica sebifera



Invasive Plants in Georgia: Severe or Emerging Threat

Chinese silvergrass
Miscanthus sinensis

C. Evans, River to River CWMA



pampas grass
Cortaderia spp.

C. Evans, River to River CWMA



Callery pear (Bradford pear)
Pyrus calleryana

C. Bargeron, UGA



chinaberry
Melia azedarach

C. McCormick, UFL



Japanese knotweed
Fallopia japonica

C. Evans, River to River CWMA



mimosa
Albizia julibrissin

C. Bryson, USDA ARS



hydrilla
Hydrilla verticillata

C. Evans, River to River CWMA



golden bamboo
Phyllostachys aurea

K. Rawlins, UGA



Nepalese browntop
Microstegium vimineum

C. Evans, River to River CWMA



ground ivy
Glechoma hederacea

L. Mehrhoff, UCONN



Invasive Plants in Georgia: Severe or Emerging Threat

shrubby lespedeza
Lespedeza bicolor



C. Miller, USFS

thorny olive
Elaeagnus pungens



J. Miller, USFS

sericea lespedeza
Lespedeza cuneata



K. Rawlins, UGA

autumn-olive
Elaeagnus umbellata



N. Loewenstein, AU

marsh dayflower
Murdannia keisak



L. Lee, SC

skunk-vine
Paederia foetida



C. Evans, River to River CWMA

Japanese spiraea
Spiraea japonica



CUSDI NPS

beach vitex
Vitex rotundifolia



F. & K. Starr, Starr Environmental

giant salvinia
Salvinia molesta



T. Evans, GRSM

Invasive Plants in Georgia: Significant Threat

giant reed
Arundo donax



C. Bargeron, UGA

salt cedars
Tamarix spp.



S. Dewey, USU

sacred bamboo
Nandina domestica



J. Miller, USFS

leatherleaf mahonia
Mahonia bealei



J. Miller, USFS

periwinkle
Vinca spp.



F. & K. Starr, Starr Env.

trifoliate orange
Poncirus trifoliata



J. Byrd, MS State

tawny daylily
Hemerocallis fulva



B. Slattery, USFWS

paper-mulberry
Broussonetia papyrifera



K. Rawlins, UGA

Japanese barberry
Berberis thunbergii



L. Mehrhoff, UCONN

cornflower
Centaurea cyanus



S. Dewey, USU

Invasive Plants in Georgia: Significant Threat

coral ardisia
Ardisia crenata



C. Evans, River to River CWMA

coco yam, wild taro
Colocasia esculenta



C. Bargeron, UGA

largeleaf lantana
Lantana camara



F. & K. Starr, Starr Environmental

monkeygrass
Liriope muscari



J. Miller, USFS

winter creeper
Euonymus fortunei



J. Miller, USFS

tungoil tree
Vernicia fordii



J. Miller, USFS

chocolate vine
Akebia quinata



C. Evans, River to River CWMA

oxeye daisy
Leucanthemum vulgare



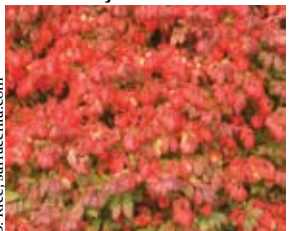
M.E. Harte, Bugwood.org

sweet breath of spring
Lonicera fragrantissima



J. Miller, USFS

winged burning bush
Euonymus alatus



B. Rice, sarracenia.com

Invasive Plants in Georgia: Significant Threat

red sesbania
Sesbania punicea



J. Randall, TNC

glossy privet
Ligustrum lucidum



J. Miller, USFS

sweet autumn virginibower
Clematis terniflora



C. Evans, River to River CWMA

Chinese parasoltree
Firmiana simplex



J. Miller, USFS

Himalaya blackberry
Rubus armeniacus



J. Miller, USFS

Queen Anne's lace
Daucus carota



J. Byrd, MS State

Florida betony
Stachys floridana



R. Wallace, Bugwood.org

camphortree
Cinnamomum camphora



C. Evans, River to River CWMA

scarlet firethorn
Pyracantha coccinea



R. Vidéki, Doronicum Kft.

parrotfeather
Myriophyllum aquaticum



G. Lovell, ADCNR

Invasive Plants in Georgia: Significant Threat

McCartney rose
Rosa bracteata



J. Miller, USFS

sawtooth oak
Quercus acutissima



D.Moorhead, UGA

Sakhalin knotweed
Reynoutria sachalinensis



B. Tokarska-Guzik, University of Silesia

Japanese privet
Ligustrum japonicum



K. Rawlins, UGA

Arrasa con todo
Gomphrena serrata



B. Wursten, Ndundu Lodge Yumba

Moss vervain
Glandularia pulchella



C. Evans, River to River CWMA

dwarf waterclover
Marsilea minuta



G. Lovell, ADCNR

Chinese holly
Ilex cornuta



C. Dennis, AU

curlyleaf pondweed
Potamogeton crispus



L. Mehrhoff, UCONN

tall morningglory
Ipomoea purpurea



H. Schwartz, CSU

Most frequently asked questions:

What is the best way to control or eradicate invasive plants from my yard?

Prevention is best, next is catching the infestation early. The following website has specific information on control and management of over 1100 invasive plants.

www.invasiveplantatlas.org

How can I find out if a plant is invasive in my area?

State or regional Exotic Pest Plant Councils have a list of the invasive plants found in your area.

www.invasive.org

www.gaeppc.org

www.se-eppc.org

Where can I find native or non-invasive plants to buy for my landscape and garden?

Many local nurseries will order native plants if you tell them what you are looking for. If you need help finding a nursery, ask your Native Plant Society. Be sure to check on the reliability and quality of the service or product offered for sale by any business.

www.gnps.org

www.wildflower.org

www.gaeppc.org

Where can I find lists for native or non-invasive alternatives to invasive plants?

Some lists only contain native species and some list both native and non-invasive exotic species.

www.gaeppc.org

www.wildflower.org/collections

www.usna.usda.gov/Gardens

www.gnps.org

www.uga.edu/botgarden

Books:

“Gardening with Native Plants of the South” by Sally Wasowski

“Best Native Plants for Southern Gardens” by Gil Nelson

“Armitage’s Native Plants for North American Gardens” by Allan M. Armitage

“Bringing Nature Home: How Native Plants Sustain Wildlife in Our Gardens” by Douglas W. Tallamy

How do I volunteer to help in the fight against invasive species in my community?

www.eddmaps.org – Map invasives in your area. EDDMapS is quick and easy to use. And there is online training to help you learn how to use it.

www.naeppc.org – Join the Exotic Pest Plant Council.

www.gabotsoc.org or www.gnps.org – Volunteer for projects with the Botanical or Native Plant Society.

www.georgiawildlife.com/getinvolved/volunteer – Help promote conservation in Georgia by volunteering with DNR's Wildlife Resources Division.

<http://aesl.ces.uga.edu/aascd/riversalive> – Rivers Alive and Adopt-a-stream programs.

If you still have a question:

Contact your local County Extension Office

<http://www.caes.uga.edu/extension/office.cfm>

or your local Georgia Forestry Commission Office

<http://www.gfc.state.ga.us/ContactUs.cfm>

or your county's Georgia Dept. of Natural Resources Conservation Ranger

<http://www.georgiawildlife.com/about/contact>

or the Georgia Dept. of Agriculture Plant Protection Division

<http://agr.georgia.gov/site>

or email to Center for Invasive Species and Ecosystem Health at: bugwood@uga.edu

The screenshot shows the homepage of the Invasive Plant Atlas of the United States. The main content area has a green background with a leaf pattern and the text "Invasive Plant Atlas of the United States". To the right, there are three boxes: "Contribute Plant Distribution Data to EDDMapS", "Contribute Photos of Invasive Plants to BUGWOOD Image Database System", and "Invasive Species News". The "Invasive Species News" box contains a list of recent news items with dates and titles.

Remember...

You Can Make a Difference. Save America's natural areas by making Plantwise choices in your landscaping.

In a recent survey of the 24.8 million forested acres in Georgia, the Georgia Forestry Commission found the following acreages occupied by invasive species.

Japanese Honeysuckle	739,400 Acres
Privets (7 species)	345,000 Acres
Kudzu	26,600 Acres
Non-native Elaeagnus	17,800 Acres
Japanese Climbing Fern	9,200 Acres
Tallowtree	7,000 Acres
Non-native Roses	5,800 Acres
Non-native Wisteria	5,000 Acres
Cogongrass	< 300 Acres

Kudzu has been called the “plant that ate the south”. What then do we call Japanese honeysuckle which covers over 27 times more forest acres and Chinese privet which covers 13 times more forest acres than kudzu?



Protect our natural areas and forests

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Native plants help to sustain wildlife



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www.gainvasives.org

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