



Chinese Wisteria,
Wisteria sinensis

The South's Least Wanted: Exotic Invasive Plants

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What are exotic invasives?

- **Exotic** = not native
- **Invasive** = capable of causing economic or environmental harm, or harm to human health
- Crowd out native species, damage natural ecosystems, threaten biodiversity



Japanese
Honeysuckle,
Lonicera japonica

Why do some exotics become invasive?

- Well adapted to our climate – from similar climates
- Pests and pathogens found in native climate not found here
- Reproduce and spread rapidly by seed or roots
- **Adaptable and competitive** - Take advantage of disturbed environments



Chinese Privet,
Ligustrum sinense

Levels of Impact

- Spread by seed or roots after cultivation, but **only in human created sites**
 - **WEEDS!**
- Spread into native areas:
 1. but do not reduce native species
 2. reduce native species
 3. **Change ecosystem function, alter composition, reduce native species**

Henbit is a common winter lawn and field weed that does not spread into native areas



Changes Ecosystem Function



Giant Salvinia,
Salvinia molesta

Changes Ecosystem Function



Kudzu,
Pueraria montana

How do they get here?

- **Intentionally** brought in as ornamentals, animal feed, or for stabilization
- **Accidentally** introduced in packing materials, ballast, crop seed. . .

Kudzu was first introduced as an ornamental in 1876, then promoted for cattle forage and soil stabilization



Common Reed, *Phragmites australis*



**Non native
haplotype
introduced in
ship ballast
around 1800**

How do they spread?

- By seed and plant or root fragments
- Carried by birds and mammals, especially berries
- By water – rivers, streams, surface flooding
- By soil – bought any “topsoil” lately?
- On equipment – boats, mowing equipment, vehicles
- In pots you bring home from the garden center!



Why does it matter?

- **Biodiversity**
- Biodiversity supports “ecosystem services” necessary for life
 - Air and water purification, climate control, pollination, erosion control
 - **Less diversity** = monocultures, species out of balance
- Invasive species are one of the greatest threats to biodiversity world wide



Large stands of Phragmites support higher mosquito populations than more diverse plant communities – including those that vector West Nile Virus

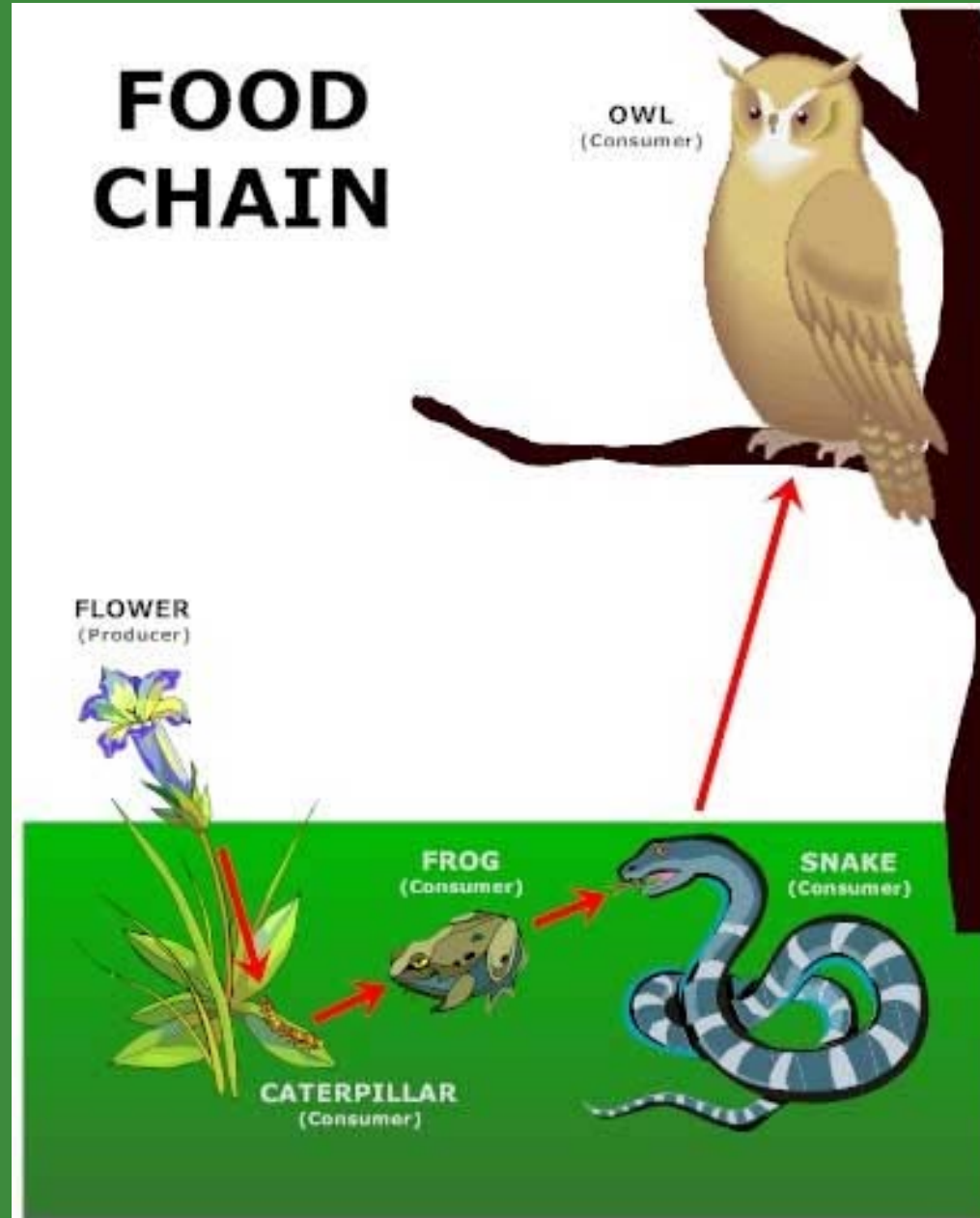
Biodiveristy



Native to Madagascar, where it is endangered, leukemia drugs have been developed from substances found in vinca/periwinkle

Local Wildlife

- The food chain for native wildlife begins with native plants
- **Native insects** survive and reproduce better on **native plants**
- Most native insects are only adapted to feed on a narrow range of plants
- **When native plants become endangered or extinct, the whole food chain is impacted**





Insects are an extremely important food source for baby birds – many invasive species do not support native insect species

Monarch caterpillars can only survive on species of *Asclepias*, commonly known as milkweed or butterflyweed.

Worst Invasive Species in SE NC

- Chinese Privet, *Ligustrum sinense*



Large, semi-evergreen shrub, white flowers spring, berries – green in summer, black-purple in fall/winter

- **Japanese Honeysuckle**

Lonicera japonica

- Semi-evergreen vine



Very fragrant white and yellow flowers in spring/summer, leaves may have entire or serrate margins



- **Chinese Wisteria**

Wisteria sinensis

- **Japanese Wisteria**

Wisteria floribunda



Dediduous vine. Fragrant spring flowers followed by bean like seed pods in fall

Beach Vitex

Vitex rotundifolia



Report to Beach Vitex Task Force,
<http://www.beachvitex.org/>
Or Melanie Doyle at NC Aquariums,
910-458-8257 ext. 250

- **Popcorn Tree**
Triadica sebifera



Deciduous with red and orange fall color, popcorn like seed sometimes used in dried arrangements. “Worm-like” flowers in early summer

More . . .

- **Common Reed,** *Phragmites australis*
- **Kudzu,** *Pueraria montana*
- **Chinaberry Tree,** *Melia azedarach*
- **Japanese Stiltgrass,** *Microstegium vimineum* →

Chinaberry Tree



What can be done?

- **Large scale control projects**
 - Beach vitex (\$1 million dollars in NC)
 - Giant Salvinia
- **Start in your backyard and neighborhood!**
 - Identify and treat invasives
 - Do not introduce new invasives!



Controlling Invasive Plants

- **First, make sure have correct ID!**
 - Take sample to local Extension office
- In most cases, just cutting the plant down is not enough!
- **Plant removal**
 - Feasible if only a few plants
 - Must dig out roots – most will resprout from root pieces left in soil
 - Monitor site for seedlings or root sprouts 1-2 years afterwards
 - Replant something else or mulch – do not leave exposed soil



Controlling Invasive Plants

- **Foliage Spray**

- Glyphosate (RoundUp and multiple generic brands)
- Nonselective - Be careful of drift!
- Mix at 2% rate, spray thoroughly
- After full leaf expansion in spring, before fall color develops in fall
- Multiple treatments often necessary



Controlling Invasive Plants

- **Cut and Paint**
 - Glyphosate (RoundUp and multiple generic brands)
 - Cut as close to ground as possible
 - Immediately paint stump with 25% glyphosate (full strength for most brands – check active ingredient listing on label)
 - Monitor – spray any summer shoots



Wear neoprene gloves whenever handling pesticides!

Controlling Invasive Plants

- Prevent future invasions!
- Be on the look out for invasive species – report unusual plants:
<http://www.eddmaps.org>

Report Sightings

Distribution Maps

Species Information

Tools & Tr

Invasive Species Mapping Made Easy!



EDDMapS, started in 2005 with Southeastern U.S. focus, is now providing a picture of the distribution of invasive species across the U.S.

- ✓ Fast and easy to use - no knowledge of GIS required
- ✓ Web-based mapping of invasive species distribution to help fill gaps and identify "leading edge" ranges
- ✓ Facilitates Early Detection and Rapid Response implementation with online data entry forms, e-mail alerts and network of expert verifiers
- ✓ One Database for both local and national data
- ✓ Data can be searched, queried and downloaded in a variety of formats
- ✓ Cooperates with and aggregates data from other invasive species mapping projects
- ✓ Custom/hosted applications can be quickly and inexpensively developed



BRING THE POWER OF EDDMAPS TO YOUR SMARTPHONE

Introducing BugwoodApps - comprehensive mobile applications that engage users with invasive species, forest health, natural resource and agricultural management

iPhone | iPad | Android

Map It!



Zap It!



Map it Again!



Avoid Planting 'Watch List' Plants

- Plants that have become invasive in other areas or have potential to become invasive
 - From similar climate
 - Prolific seed or berry producers
- Often **lag time** between introduction and invasiveness – as much as 50 years!
- Instead plant sterile varieties of non natives or plants native to our area

Sawtooth Oak,
Quercus acutissima



Watch List: Nandina

- *Nandina domestica*
- Medium evergreen shrub, mostly grown for fall/winter berries
- Dwarf types do not fruit!



'Firepower', a dwarf variety, never produces fruit.

Plant instead: American Beautyberry

- *Callicarpa americana*



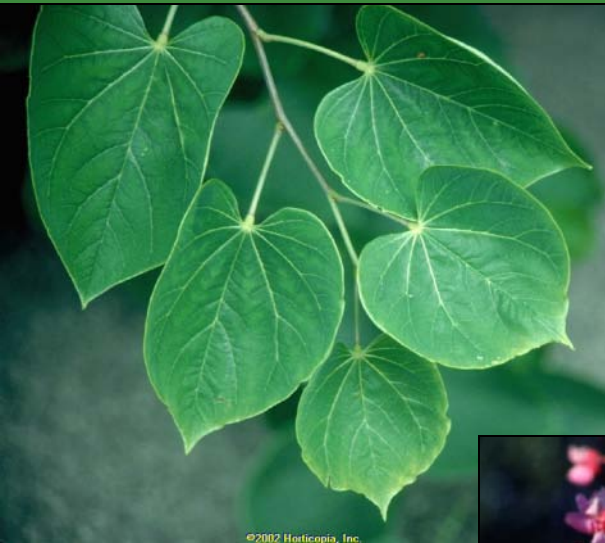
Watch List: Bradford Pear

- *Pyrus calleryana*



Plant Instead: Redbud

- *Cercis canadensis*



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Redbud Cultivars

'Forest Pansy'

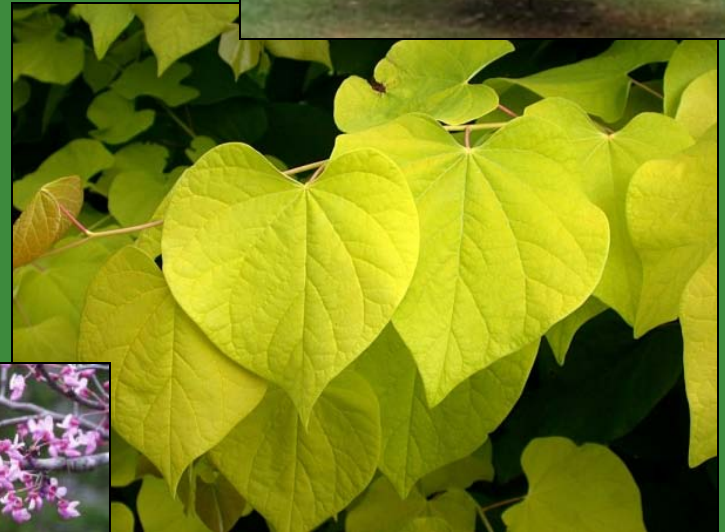
'Merlot'



'Royal White'



'Hearts of Gold'



Watch List: Miscanthus

- Maiden Grass,
Miscanthus sinensis



Plant Instead: Panic Grass

- *Panicum virgatum*
- Aka Switch Grass



Plant Instead: Muhly Grass

- *Muhlenbergia capillaris*



Watch List: Japanese Ligustrum

- *Ligustrum japonicum*
- Medium-large evergreen shrub
- Chinese ligustrum is our worst invasive in SE NC!



Plant Instead: Hollies

- *Ilex* hybrids
- 'Nellie Stevens'
- Red Hollies – hybrids
 - 'Oakleaf'
 - 'Cardinal'
 - 'Festive'
 - 'Robin'
- 'Fosters'



'Oakleaf'



Plant Instead: Yaupon

- *Ilex vomitoria*

Weeping Yaupon



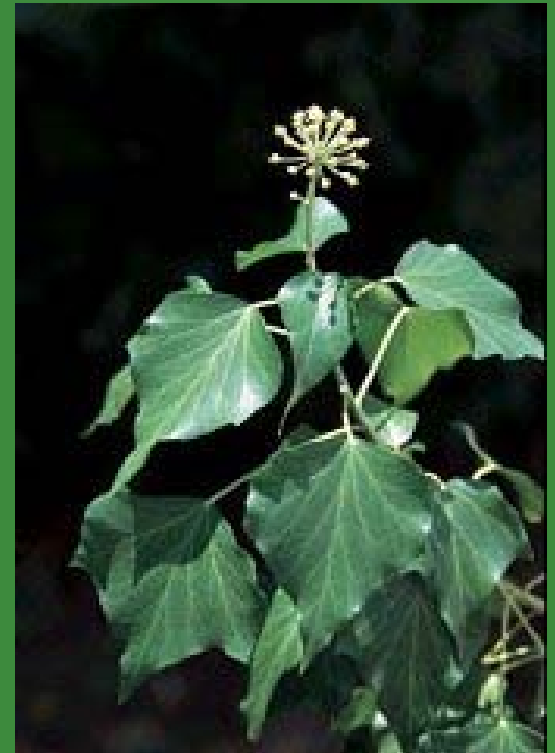
Plant Instead: Wax Myrtle

– *Morella cerifera*



Watch List: English Ivy

- *Hedera helix*



Plant Instead: Native Vines

- Several are readily available
- Vigorous climbers – need large support (in wild climb up trees)

Carolina Jessamine,
Gelsimium sempervirens



Coral Honeysuckle

- *Lonicera sempervirens*



American Wisteria

- *Wisteria frutescens*



Only Plant Native Wetland/Aquatic Species

- Most wetland species reproduce rapidly
- Wetlands are very sensitive habitats
- The potential for non natives to become invasive is too great!

NC's worst giant salvinia infestation began with one plant in a backyard water garden and cost \$500,000 to eradicate!



Never give excess aquatic plants a “good home” in a local stream or lake!



Native Wetland Plants

- Blue Flag Iris
 - *Iris virginica*
 - *Iris versicolor*



Yellow Flag Iris, *Iris psuedacorus*, is not native and is potentially invasive!



Rose Mallow

Hibiscus moscheutos



Seashore Mallow

Kosteletskyia virginica

- **Pickerelweed**

– *Pontederia cordata*



Duck Potato, *Sagittaria latifolia*

Learn More!

- **Going Native: Landscaping for Wildlife with Native Plants (NC Cooperative Extension)**
 - <http://www.ncsu.edu/goingnative>
- **North Carolina Botanical Gardens**
 - <http://ncbg.unc.edu/>
 - Plants and Gardens Link
 - Invasive Exotic Plants
- **Southeast Exotic Plant Pest Council**
 - <http://www.se-eppc.org/>

Gardening News by Email

Pender Gardener – regular updates about sustainable lawn and landscape care, great plants, and pest management

- **To Subscribe:** send an email to mj2@lists.ncsu.edu
 - Leave the subject line blank
 - In the body of the message put: **subscribe pendergardener**

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- **To subscribe:** send an email to mj2@lists.ncsu.edu
 - Leave the subject line blank
 - In the body of the message put: **subscribe foodgardener**

Master Gardener Spring Plant Sale

Pender Extension Center

801 S. Walker St., Burgaw

Thurs, April 19, 2pm – 6pm

Fri, April 20, 8:30am – 6pm

Sat, April 21, 8:30am – Noon

- Many varieties of vegetables, annuals, perennials, blueberries, figs, and Knockout roses



Pender County

Cooperative Extension

801 S. Walker St., Burgaw
259-1235

Visit <http://pender.ces.ncsu.edu> to submit questions to our 'Ask an Expert' widget

Pender Gardener Blog:

<http://pendergardener.blogspot.com>

