

AUSTIN'S LEAST WANTED INVASIVE PLANT SPECIES

Louis René Barrera
Environmental Conservation Information Specialist
Austin Nature Preserves System
Natural Resources Division
Parks and Recreation Department
City of Austin

What is an invasive plant species?

“An invasive plant is one that is non-native to the ecosystem under consideration and whose introduction causes or is likely to cause economic or environmental harm, or harm to human health.

National Invasive Species Council

Second only to habitat loss due to development, non- native invasive species pose the greatest threat to the survival of native biota in the United States and other countries.

Characteristics of Invasive Plant Species

- Has no native predators.
- Produces abundant seeds and fruit
- Early maturity
- Attractive ornamentals
- Some allopathic
- Escapes and colonizes
- Different phenology

Invasive Species

- ❖ Cause major environmental damages and losses adding up to more than \$137 Billion Dollars per year. (Pimentael,et al, 1999Cornell University)
- ❖ Approximately 50,000 foreign species are estimated to have been introduced in the United States. (Pimentael,et al, 1999Cornell University)
- ❖ 400 of the 958 species listed as threatened or endangered under the Endangered Species Act are considered to be at risk

(Nature Conservancy1996; Wilcove et al. 1998)

Impacts of Invasive Species

- ❖ **Introduces diseases and parasites**
- ❖ **Affects nutrient cycling and alters delicate ecosystem structure**
- ❖ **Affects predator prey relationship**
- ❖ **Diminished biological diversity**
- ❖ **Wildlife decline**
- ❖ **Decreases in land use and values**
- ❖ **Loss of recreational areas**
- ❖ **Riparian areas and watercourses are most susceptible**
- ❖ **Alters regional distinctiveness of flora and fauna**

Invasive Plants

- **Nandina**
- **Chinaberry**
- **Chinese tallow**
- **Wax-leaf Ligustrum**
- **Johnson grass**
- **K R Bluestem**
- **Tree of Heaven**
- **Bermuda grass**
- **Chinese privet**
- **Japanese Honeysuckle**

- *Nandina domestica*
- *Melia azedarach*
- *Sapium sebiferum*
- *Lonicera japonica*
- *Sorghum halepense*
- *Bothriochola ischaemum*
- *Ailanthus altissima*
- *Cyanodon dactylon*
- *Ligustrum sinense*
- *Lonicera japonica*



NANDINA
Nandina domestica



Chinaberry
Melia azedarach





Chinese tallow
Sapium sebiferum





Wax- Leaf Ligustrum
Japonicum ligustrum



Johnson grass
Sorghum halepense



KR Bluestem
Bothriochola ischaemum



Tree of Heaven

Ailanthus altissima



Bermuda grass
Cyanodon dactylon



Chinese Privet
Ligustrum sinense



Japanese Honeysuckle
Lonicera japonica

Other invasive species are...

- English Ivy
- Vitex
- Giant annual mustard
- Holly Fern
- Giant Reed
- Bamboo
- Asian jasmine
- Paper mulberry
- Pyracantha
- Oleander
- Black locust
- Kudzu



•East Bouldin Creek

Other Harmful Invasive Species

Aquatic

- Hydrilla
- Waterhyacith
- Asian clam
- Elephant ear

Plant Pathogens

- Dutch Elm Disease
- Chestnut Disease

Mammals

- Feral swine
- Nutria

Insects

- Red imported fire ant
- Africanized honeybee

Viruses

- West Nile Disease-Asian Tiger Mosquito

Elephant Ear

Xanthosoma sagittifolium



- In San Marcos Associate Professor Tom Arsuffi has calculated that elephant ears...
- Draw about 17,500 acre feet of water each year.
- Based on \$61.00 per acre foot the city pays Blanco River Authority
- This equals a “species” annual water bill at over One million dollars.

-San Marcos Daily Record

Areas of concern

- Wilderness areas/
Parklands
- Wetlands and
waterways
- Range lands and
pastures
- Private property
- Public lands
- Croplands
- Utility easements
- Road ways/ ROW
- Detention ponds

Methods for prevention, control and removal

Mechanical Management

- Manual
- Mowing
- Disking
- Brush control
- Solar, thermal & infrared



Methods for Prevention, Control and Removal

Herbicidal Management

- Foliar Spray Method
- Cut Stump /Basal Bark method
- Selective weeding
- Chemical mowing



Methods for prevention, control and removal

Biological Management

- Classical
- Augmentation
- Conservation

*Photo by Mike Lyday,
Watershed protection



Methods for prevention, control and removal

Ecosystem Management

- Erosion control
- Hunting
- Grazing
- Prescribed Burns



Methods for prevention, control and removal

Cultural Management

- Public awareness/ education
- Regulatory fines (in other states)
- Border crossing checks/ confiscation
- Special Red alerts
- Research/ Ecological Restoration

What's next...

- Early detection /Rapid Response
- Inventory invasive species
- Establish rating system in regard to threat to ecosystem
- Develop a regional strategy to manage/ control and eradicate
- Understand disturbance regime
- Need to create incentives to replace and not grow invasive plants
- Identify resources/ Grants
- Conduct research/ establish best practices
- Promote native plant education and restoration

Why Native Species?



- Reduced water consumption
- Require less fertilizers, pesticides
- Can withstands Texas' unique climate
- Supports wildlife more effectively
- Enhances biological diversity

Programs

- **Austin Biodiversity Project**
- **Austin Native Plant Rescue Program**
- **Grow Green Program**
- **TPWD/ NWF certified habitat programs**
- **NWF School yard habitat program**
- **Others...**



The **Austin Biodiversity Project** is a comprehensive effort to leverage City of Austin and non-profit resources to protect biodiversity in the Austin area through restoring and enhancing urban habitats.

Some of the objectives of the project are:

- **Lower costs for City of Austin restoration, re-vegetation, and tree planting projects**
- **Create a reliable source for scarce local ecotype plants and seeds**
- **Educate Austin citizens about local ecology and biodiversity**
- **Support urban forestry, urban heat island, and air quality improvement efforts with locally adapted native trees**
- **Assist restoration efforts in City of Austin preserves and remnant habitats through growing and rescuing plants**
- **Support storm water and watershed projects with local ecotype aquatic plants**
- **Create a Biodiversity Atlas of Travis County**



Austin Native Plant Rescue

- ✿ A cooperative volunteer/ developer granted effort to rescue native plants from public work's and development projects.
- ✿ A low cost source for locally- adapted native plant material for city-based bioengineering, and ecological restoration projects.
- ✿ A coordination process to educate the public about native plant propagation and ecological restoration projects to help improve **Austin's native biodiversity.**

Austin Native Plant Rescue

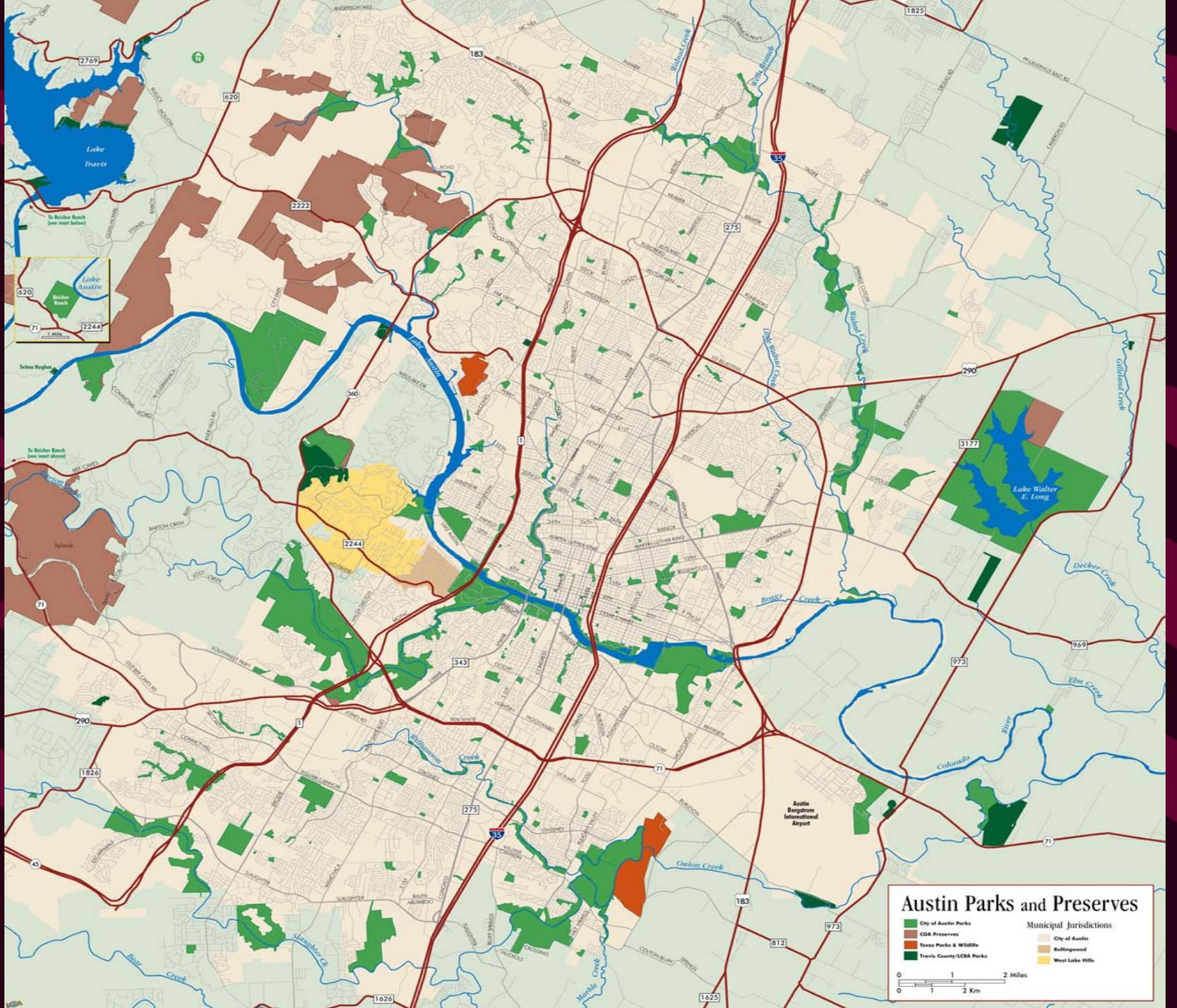




If you would like to help...
Call 327-7723 or e mail
rene.barrera@ci.austin.tx.us

Austin Nature Preserves System





Austin Parks and Preserves

■ City of Austin Parks	■ Municipal Jurisdictions
■ COA Preserves	■ City of Austin
■ Texas Parks & Wildlife	■ Ballisgewood
■ Travis County/LECA Parks	■ West Lake Hills

0 1 2 Miles
0 1 2 Km

“KEEP AUSTIN WILD™”



PHOTO BY JOHN INGRAM, 2005

Presentations

- ✓ Austin Biodiversity Project
- ✓ Capital Area Master Naturalist
- ✓ Invasive Conference, LBJ Wildflower Center
- ✓ Barton Hills Neighborhood Association
- ✓ National Wildlife Federation Stewardship program
- ✓ St Stephens Episcopal School
- ✓ Weeds Conference- *Zilker Botanical Gardens*