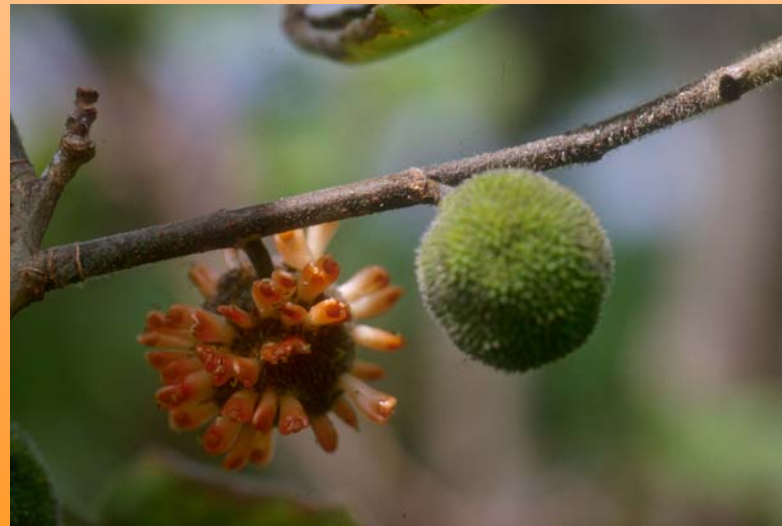


# Paper Mulberry

*Broussonetia papyrifera* (L.) Moraceae



# Biology

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- Native to Japan and Taiwan
  - Used in paper making
- Hawaii and other parts of south Pacific
  - Use bark to make cloth
- Large shrub to small tree – 30 feet tall

# Background

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## Economic Uses

- Used extensively as an ornamental
  - Fast growing
  - Quick shade
  - Unique leaves, foliage



# Distribution

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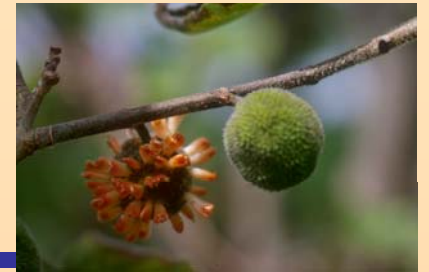
- Found throughout much of eastern U.S. from Massachusetts to Illinois
- Common throughout Florida, often as an escape into open habitats such as forest and field edges

# Paper Mulberry Distribution in Florida



# Impacts

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- Category II invasive species (FLEPPC)
  - Limited spread into undisturbed sites
- Quickly invades in disturbed sites in Florida due to warm, tropical climate
- Forms dense thickets, inhibiting native species growth, deters wildlife

# Identification

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# Mature Plant

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- Small tree – 20 to 30 feet in height
- Mounded appearance
- Forms dense thickets
- Deciduous





# Stems

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- Stipule scars on twigs
- Hairy stems
- Reddish to brown twigs in winter
- Milky sap when damaged



# Leaves

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- Alternately arranged
- Soft hairs on underside
- Smaller leaves
  - Ovate, pointed tips
  - Serrate margins
- Larger leaves
  - Cordate, mitten-shaped
  - Sometimes deeply lobed



# Flowers and Fruits

- Dioecious - flowers on separate trees
  - Male flowers are catkins, long clusters
  - Female flowers are ball-shaped flower clusters
- Aggregate fruits –  $\frac{1}{2}$  to 1 inch in diameter



# **Management**

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**Preventative**

**Cultural**

**Mechanical**

**Biological**

**Chemical**

# Preventative

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1. Limit planting as an ornamental
2. Remove existing plants, including resprouts and before seeds are produced
3. Rouge out trees in abandoned areas

# Cultural

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1. Alternative landscape plants to replace paper mulberry
2. Programs to educate homeowners about the problems associated with this plant and proper identification
3. Maintain good ground cover and mixture of plant species to reduce establishment

# **Biological**

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1. There are no known biological control agents available for paper mulberry management in Florida or the southeastern U.S.

# Mechanical



1. Hand pull young seedlings, including all roots, repeated pulling for resprouts
2. Cut tree down at ground level
3. Girdling is effective for large trees
  - Cut through bark approximately 6 inches above the ground, encircling tree base
4. Mowing is effective on small saplings and resprouts, but must be repeated



# Chemical - Foliar



1. Over-the-top applications for seedlings, resprouts and small trees
2. Thoroughly wet leaves with herbicide
  - ✓ Triclopyr – 2 to 4% solution
  - ✓ Glyphosate – 2 to 3% solution
  - ✓ Use surfactant at 0.25%
3. Best results applied July to October

# Chemical - Basal

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1. Individual trees, near desirable species
2. Use 25% triclopyr solution with basal oil
3. Apply 12 to 15 inches above ground on tree trunk
4. Wet thoroughly for good control, spray until run-off is noticeable at ground line

# Chemical – Cut Stump



1. Individual trees, near desirable species
2. Cut trunks/stems horizontally at or near ground level
3. Apply 25% solution of glyphosate or triclopyr
4. Cover the outer 20% of the stump
5. Marker (blue) dye is helpful



# Useful Links

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- Invasive and Exotic Species of North America: [www.invasive.org](http://www.invasive.org)
- University of Florida Center for Aquatic and Invasive Plants:  
<http://aquat1.ifas.ufl.edu/welcome.html>
- University of Florida's Cooperative Extension Electronic Data Information Source: <http://edis.ifas.ufl.edu/index.html>

# Useful Links

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- USDA Natural Resources Conservation Service, Plants Database:  
<http://plants.usda.gov>
- Morgan, E.C. and W.A. Overholt. 2004. Wildland Weeds: Paper Mulberry, *Broussonetia papyrifera*. Publication ENY-702, Entomology and Nematology Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. <http://edis.ifas.ufl.edu/IN498>

# Useful Links

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- Plant Invaders of Mid-Atlantic Natural Areas:  
<http://www.nps.gov/plants/alien/pubs/midatlantic/indexsci.htm>
- Invasive and Exotic Species of North America:  
<http://www.invasive.org/library/FLFSNoxWeeds/papermullberry.html>

# Literature Cited

Langeland, K.A. and K. Craddock Burks. 1998. Identification and Biology of Non-Native Plants in Florida's Natural Areas. IFAS Publication SP 257. University of Florida, Gainesville. 165 pp