Mid-Atlantic Invaders Tool

A New Information Portal for Invasives in the Mid-Atlantic States

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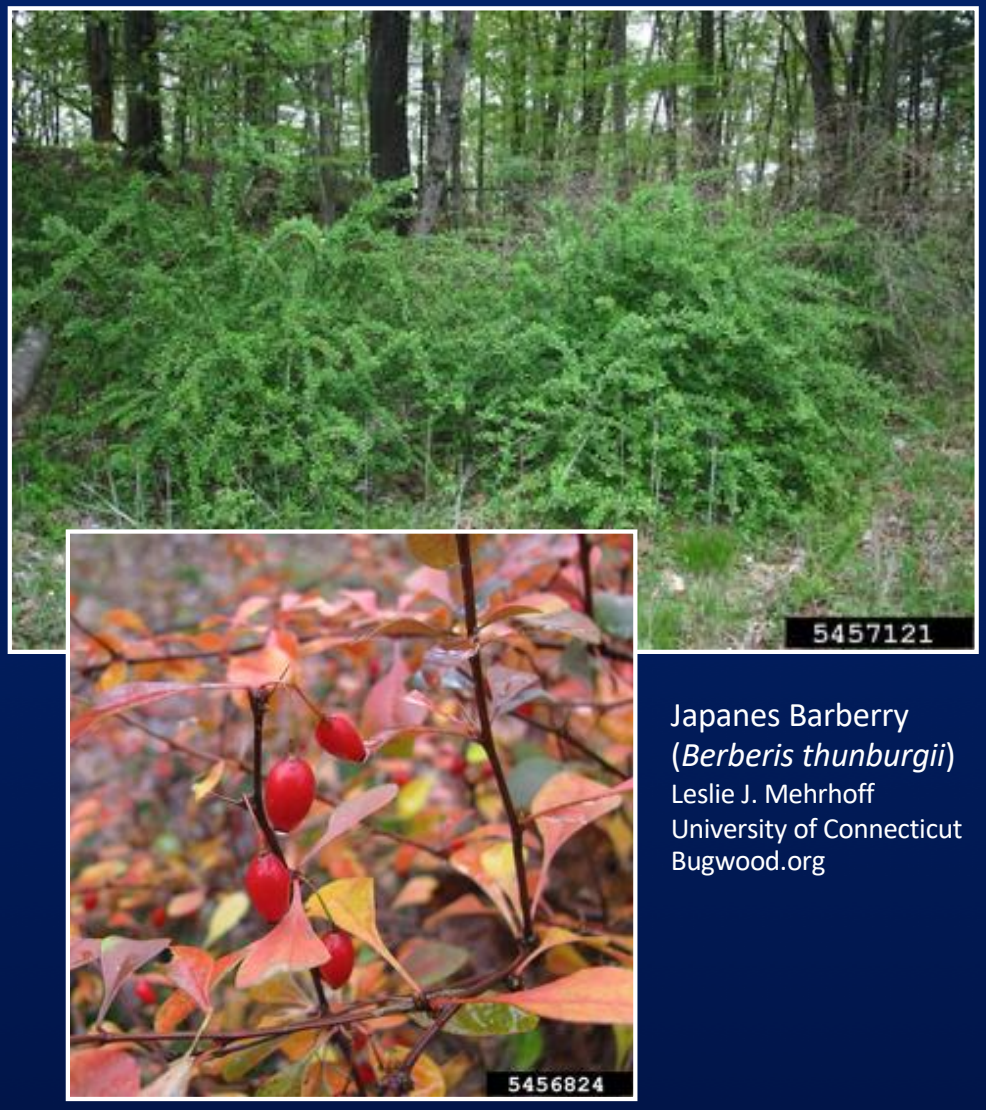
Goal of Mid-Atlantic Invaders Tool

Provide a powerful tool for people with diverse backgrounds, interests and skills to obtain up-to-date information on invasive species



Japanes Barberry (*Berberis thunburgii*)
Leslie J. Mehrhoff
University of Connecticut
Bugwood.org

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MAIT Uses

Provide vital data for individuals and organizations to:

- Become more aware of invasives
- Report the presence of invasives
- Implement early detection/ rapid response to prevent establishment of new invasives
- Inform policy-makers
- Solicit funding for research, control and prevention
- Foster collaborations

Waterwheel (*Aldrovanda vesiculosa*)
Jan Wieneke, Wikimedia Commons 8/4/05

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MAIT Uses (Cont.)

Provide vital data for individuals & organizations to:

- Control invasives more effectively in the field
- Understand importance of being responsible in:
  - Choosing non-invasive plants for landscaping
  - Enjoying recreational activities without spreading invasive plants, animals and pathogens

Purple Loosestrife, (*Lythrum salicaria*)
Judy Fulton 8/18/15

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MAIT Constituencies

- Public & private organizations or individuals
  - Government agencies
  - Educational institutions
  - Policy-makers
  - Landscape architects
  - Invasive species managers
  - The public
  - The media
- Beginners to experts

Japanese Knotweed (*Fallopia japonica*)
Tom Heutte, USDA Forest Service
www.invasive.org

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Limitations of Existing Lists

MISC

About Links Invaders of the Month Species of Concern

Invasive Species of Concern in Maryland

Terrestrial Plants Aquatic Plants Vertebrates Insects Other Invertebrates Diseases and Other Organisms

Aquatic Plants

This list includes updates as ratified at the May 17, 2018 MISC Meeting.

Search:

Key Code	Scientific Name	Common Name
	* *Aldrovanda vesiculosa*	Waterwheel plant
* 1 2, 3	* *Caulerpa taxifolia*	Marine Macroalgae
2	*Didymosphenia geminata*	Didymo, Rock Snot
* 2	* *Egeria densa*	Brazilian Waterweed
* 1, 2, 3	* *Eichhornia crassipes*	Water Hyacinth
1, 2, 3	*Hydrilla verticillata*	Hydrilla
	Iris pseudacorus	Yellow iris
1, 2	*Myriophyllum aquaticum*	Parrot Feather
2, 3	*Myriophyllum spicatum*	Eurasian Water-Milfoil
	Pistia stratiotes	Water lettuce

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MAIT Design

Mid-Atlantic Invaders Tool (MAIT)

Delaware, District of Columbia, Maryland, New Jersey, Pennsylvania, Virginia, West Virginia

Frequently Asked Questions

What is a native species?

What is a non-native or 'alien' species?

What is an invasive species?

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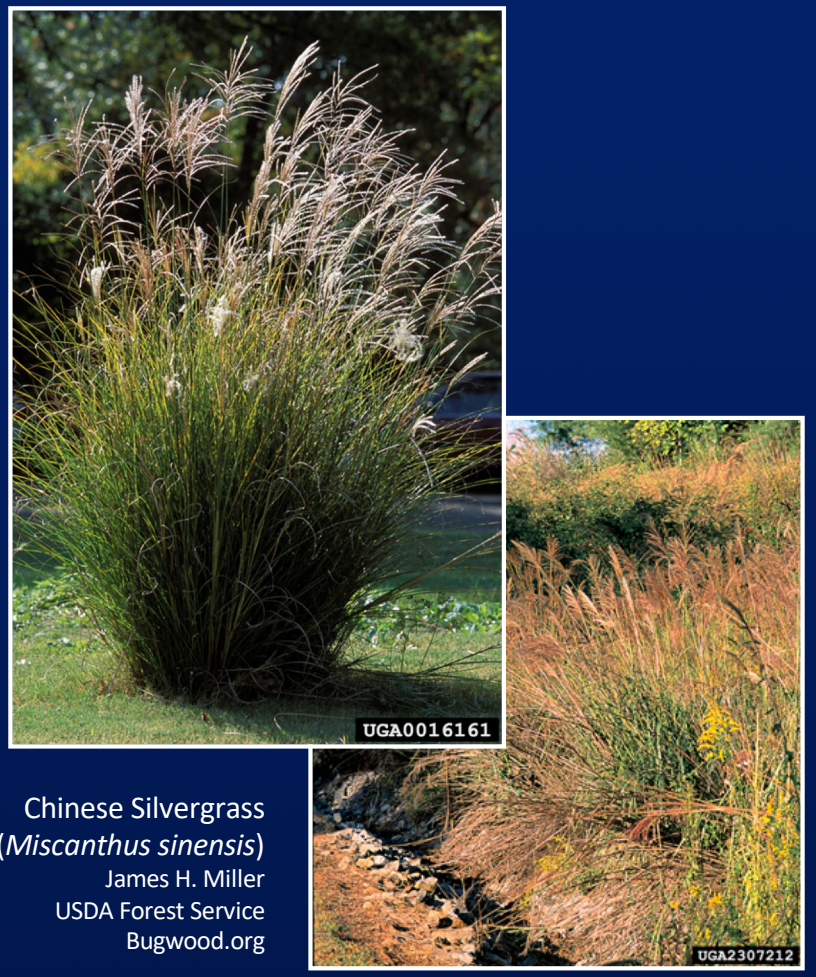
MAIT Strengths

- Ease of use for beginners
- More sophisticated tools for power users
- Customizable features
- Established technical platform in nationally used invasive.org
- Regional orientation, not national
- Excellent maintenance capabilities
  - Links to other databases
  - Invasive.org database updates automatically showing in MAIT



Chinese Silvergrass
(*Miscanthus sinensis*)
James H. Miller
USDA Forest Service
Bugwood.org

Invasive.org Platform

INVASIVE.ORG
Center for Invasive Species and Ecosystem Health

Check out our Newest Features

Invasives 101 | Species | Images | Publications | Maps | Videos | Control | EDRR | CWMAs/CISMAs | How to ... | Global | Help

Browse | Search

Browse By
- Nodes
- Commodity
- Taxonomy
- Damage Types
- Photographers
- Organization
- Location
- Hosted Archives
- Selected Image Sets
- Image Series

Diseases

- Root/Butt Diseases
- Stem Decays/Cankers
- Foliage Diseases
- Decline Complexes Dieback/Wilts
- Stem Rusts
- Broom Rusts
- Biotic Damage
- Diseases of Insects
- Fungi

More Sources of Disease Images

- Diseases of Crops
- Invasive / Exotic Diseases
- American Phytopathological Society

tar spots, *Rhytisma* spp. Fr.
Photo by Robert Anderson, USDA Forest Service

University of Georgia | APHIS | UAS | ITP | USDA | United States Department of Agriculture | National Institute of Food and Agriculture

MAIT System Capabilities

- Add useful features to invasive.org
- Offer flexible online data access
- Tailor to interest level & expertise
- Enable users to
  - View default tables by taxa
  - Select a subset of a table
  - Sort a table by data type
  - Create a customized table by selecting from data elements
  - Search for particular species and call up a dedicated webpage
- Offer downloads in formats for manipulating data

Norway Maple (*Acer plananoides*)
Zelimir Borzan, University of Zagreb, Bugwood.org

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MAIT Data Sources: Databases

All Invasives: Invasive.org, Center for Invasive Species, Univ. of Georgia

Plants: USDA-ARS Germplasm Resources Information Network (GRIN)

Plants: Wetland Ratings, U.S. Army Corps of Engineers

Grasses: Tropicos Catalogue of New World Grasses

Taxonomy: ITIS.gov, Integrated Taxonomic Information System

Aquatics: Nonindigenous Aquatic Species, USGS

Aquatics: National Exotic Marine & Estuarine Species Information System

MAIT Data Sources: Databases

Plant Viruses: International Committee on Taxonomy of Viruses

Plant Fungi: Index Fungorum, Royal Botanical Gardens Kew

Plant Bacteria: Bull, C.T. et al., Comprehensive List of Names of Plant Pathogenic Bacteria, Journal of Plant Pathology

Nematodes: Plant & Insect Parasitic Nematodes, Univ. of Nebraska

Insect Plant Pests: EPPO Global Database, European and Mediterranean Plant Protection Organization

Mollusks: MolluscaBase, Multiple Malacologists

MAIT Data Sources: Experts

Input from expert scientists on taxa at State of MD departments

Pathogens
Insects

Aquatic species
Non-aquatic vertebrates

Crown Gall
(*Rhizobium radiobacter*)
Brian Olsen
Oklahoma State University
Bugwood.org

Common Water Hyacinth
(*Eichhornia crassipes*)
Wilfredo Robles, Mississippi State University
Bugwood.org

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MAIT Data Sources: Lists

- 29 Lists from throughout Mid-Atlantic region
  - Delaware
  - District of Columbia
  - Maryland
  - New Jersey
  - Pennsylvania
  - Virginia
  - West Virginia
  - Entire Mid-Atlantic region
- Taxa on lists
  - All with invasive plants
  - Some with species in all taxa

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Plants

Aquatic Plants | Terrestrial Plants | Ornamental Plants | Regulated Plants

Reset Page | Customize Table | Print Table | Download Table

The following organisms are invasive or at risk for becoming invasive in the Mid-Atlantic region.
To reorder the table, click on a column heading. For more information on a species, click on the species name.

Showing 1 to 10 of 636 entries | Show 10 ▼ entries

Search table

Scientific Name ↑↓	Common Name ↑↓	Habit ↑↓	Habitat ↑↓	Aquatic Form ↑↓	Ornamental ↑↓	Regulated ↑↓
Acer platanoides	Norway maple	Tree	Terrestrial		Yes	N/A
Acorus calamus	American sweetflag	Forb	Aquatic	Emergent	Yes	N/A
Ailanthus altissima	Tree-of-heaven	Tree	Terrestrial/Wetland		Yes	WV
Akebia quinata	Chocolate vine	Vine	Terrestrial		Yes	N/A
Albizia julibrissin	Mimosa	Tree	Terrestrial		Yes	N/A
Alliaria petiolata	Garlic mustard	Forb	Terrestrial/Wetland			N/A
Allium vineale	Wild garlic	Forb	Terrestrial/Wetland			DE, MD, NJ, PA, VA, WV
Aralia elata	Japanese angelica	Tree	Terrestrial		Yes	N/A

MAIT Example: Standard Table

- Standard plant table:
  - Scientific name
  - Common name
  - Habit (e.g., tree, forb)
  - Aquatic/wetland/terrestrial
  - Aquatic form (e.g., SAV)
  - Ornamental
  - Regulatory

Kudzu
(*Pueraria montana* var. *lobata*)
Johnny Randall
North Carolina Botanical Garden
Bugwood.org

Kudzu
(*Pueraria montana* var. *lobata*)
Mark Atwater
Weed Control Unlimited, Inc.
Bugwood.org

MAIT Example: Customized Table

- Customized plant table with user-selected data such as:
  - Taxonomic family
  - Taxonomic subfamily or tribe
  - Scientific name synonyms
  - Uses (e.g., forage)
  - Wetland indicator status
  - Native range
  - Mid-Atlantic states & invasive sources listing the species

Tawny Daylily (*Hemerocallis fulva*)
Dan Tenaglia, Missouriplants.com, Bugwood.org

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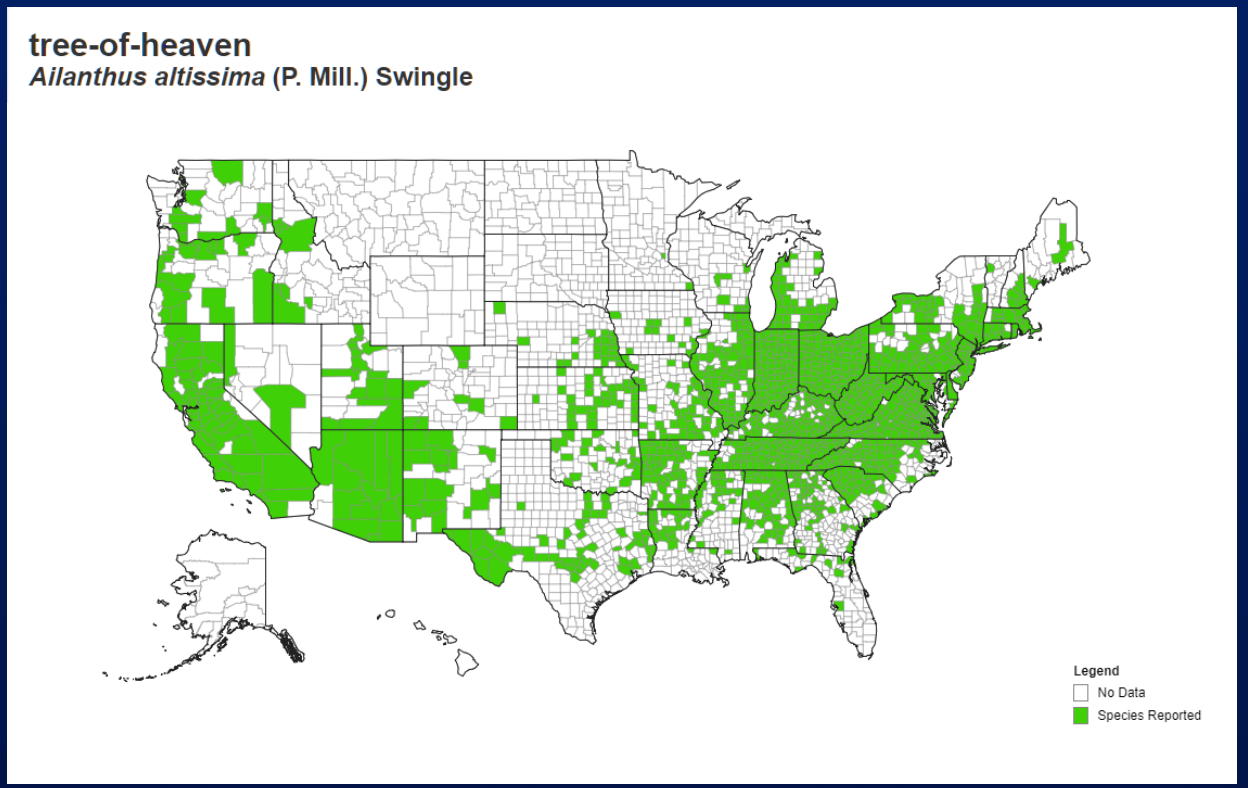
MAIT Example: Species Webpage

- One webpage per species with additional data:
  - Species description
  - Resource links (e.g., control suggestions)
  - Distribution maps
  - Photos



U.S. Distribution of Tree-of-Heaven (*Ailanthus altissima*)
EDDMapS 2018
Early Detection & Distribution Mapping System
The University of Georgia
Center for Invasive Species and Ecosystem Health

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Future Directions

- Add new species as they become invasive or at risk in Mid-Atlantic
- Continue to add and maintain data on individual species
  - Downloads from other databases
  - Manual entry
- Link to EDDMapS/MAEDN
- Investigate link to ID feature in iNaturalist
- Make MAIT's features available to other users of invasive.org (e.g., customized reports)

Linden Viburnum (*Viburnum dilatatum*)
Hamachidori, Wikimedia Commons 11/15/10

Linden Viburnum
(*Viburnum dilatatum*)
Kenpei, Wikimedia 11/12/10

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MAIT Collaborators & Funding Sources

THE UNIVERSITY OF GEORGIA
CENTER FOR INVASIVE SPECIES AND ECOSYSTEM HEALTH
WARNELL SCHOOL OF FORESTRY AND NATURAL RESOURCES
COLLEGE OF AGRICULTURAL AND ENVIRONMENTAL SCIENCES

UNIVERSITY OF MARYLAND EXTENSION

MASTER GARDENER

MID-ATLANTIC INVASIVE PLANT COUNCIL

Questions?

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