Invasive Plant Mapping: I can do all that on my phone?

Rebekah D. Wallace and Charles T. Bargeron

University of Georgia
Center for Invasive Species and Ecosystem Health

CISEH

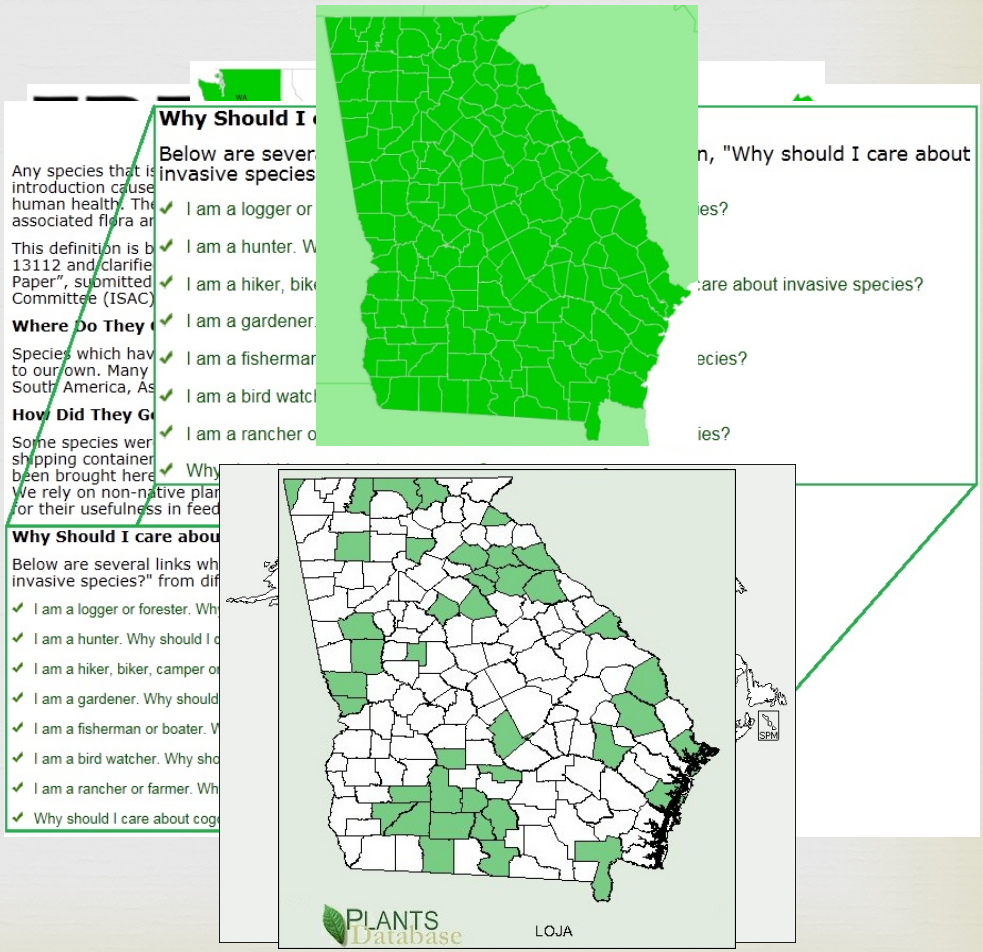
- Center for Invasive Species and Ecosystem Health
  - Bugwood Network 1994-2008
  - CISEH Feb 2008
- Began as an image database…
- Now:
  - Aggregate distribution data (Invasive species and Biocontrol)
  - BugwoodVideo
  - BugwoodWiki
  - Provide web hosting and build tools to make data, images, videos, and information available
  - Community of Practice for eXtension

EDDMapS

- Early Detection and Distribution Mapping System
- Web based electronic reporting and distribution mapping
- Invasive species mapping
- Biological control agent release mapping
- Mapping Nationwide
  - Expanding into Canada
- Host websites for regional mapping projects

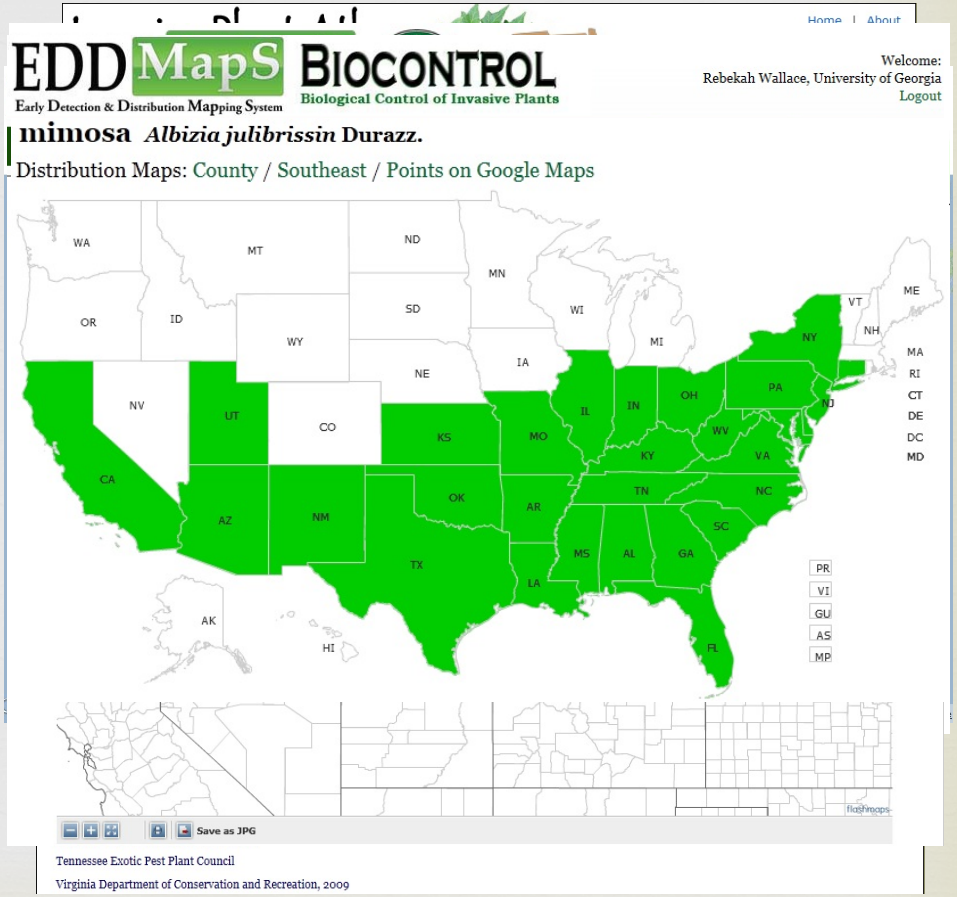
EDDMapS Purpose

- Electronic Early Detection Tool
- Aggregate Data
  - Homeowners
  - Trained volunteers
  - Federal and State Agencies
- Identify Existing Range, Gaps, and Leading Edge in Maps



EDDMapS Tools

- Local and National Distribution Maps
- Identification and Management
- Invasive Species Mapping
  - Plants – Nationwide
  - Animals – Florida
- Biocontrol Release Maps



EDDMapS
Early Detection & Distribution Mapping System

Welcome:
Rebekah Wallace, University of Georgia
Logout

Report Sightings | Distribution Maps | Species Information | Tools & Training | My EDDMapS | About

Select State to Report Invasive Species Occurrence

U.S. States

Alabama
Alaska
Arizona
Massachusetts
Michigan
Minnesota
Mississippi
Tennessee
Texas
Utah
Vermont

Caribbean Countries

Bahamas
Dominican Republic
Jamaica

EDDMapS
Early Detection & Distribution Mapping System

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Report Sightings | Distribution Maps | Species Information | Tools & Training | My EDDMapS | About

Report an Invasive Species Occurrence

Please provide as much information about the sighting as possible.

Species:

Begin typing scientific or common name and then select species from dropdown.
If the pest is not listed or is unknown, type and choose "unlisted plant" or "unknown plant" from the list and describe the plant in the Comments section below.

Pest:

Infestation:

Observation Date: 01/17/2012 (?)

Infested Area: Select One (?)

Gross Area: Select One (?)

Habitat: Select One (?)

Canopy Closure: Select One (?)

Abundance/Density: Select One

Plant Description: Mature | Sapling/Immature | Seedling/Rosette | In Flower | In Fruit | Seeds | Dormant/Dead | Unknown

Location:

Specify the location where you observed the pest, by first selecting the county from the dropdown. Then move the marker on the map to the correct location. If you move across county lines the new county will be displayed. You can also enter the lat/long in the fields below and then click the "Jump to Point" button.

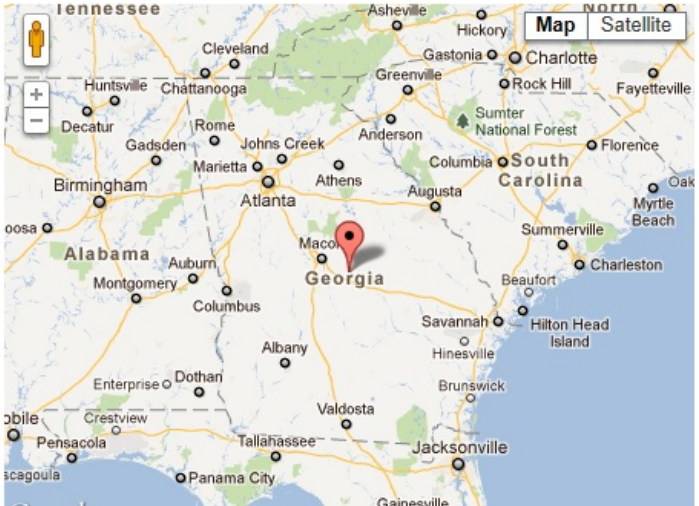
County: Select One

Latitude:
Must be expressed in Decimal Degrees (XX.XXXX) and DATUM NAD83/WGS84.

Longitude:
Must be expressed in Decimal Degrees (XX.XXXX) and DATUM NAD83/WGS84.

Jump to Point

Location Description: Knight Rd, Danville, GA 31017, USA



Map data ©2012 Europa Technologies, Google, INEGI - Terms of Use

Marker status: *Click and drag the marker.*

Site Name:

Ownership: Select One (?)

* If reporting infestation on private land, be sure to have landowner's permission.

Lat/Long Conversion Tools:

Convert from UTMs | Convert from DMS | Convert from DM

Upload Images with Your Report:

For verification purposes, take at least two digital images, a close up of the species and one of the site.

Image: Browse... (.jpg, < 4 mb)

Caption:
(provide as much detail as possible, include credit if image is not yours)

Image: Browse... (.jpg, < 4 mb)

Caption:
(provide as much detail as possible, include credit if image is not yours)

Image: Browse... (.jpg, < 4 mb)

Caption:
(provide as much detail as possible, include credit if image is not yours)

Image: Browse... (.jpg, < 4 mb)

Caption:
(provide as much detail as possible, include credit if image is not yours)

Image: Browse... (.jpg, < 4 mb)

Caption:
(provide as much detail as possible, include credit if image is not yours)

Additional Information:

Comments:

Identified by: (if you didn't identify)

Voucher Specimen Made: Yes No

Herbarium holding specimen:

Report

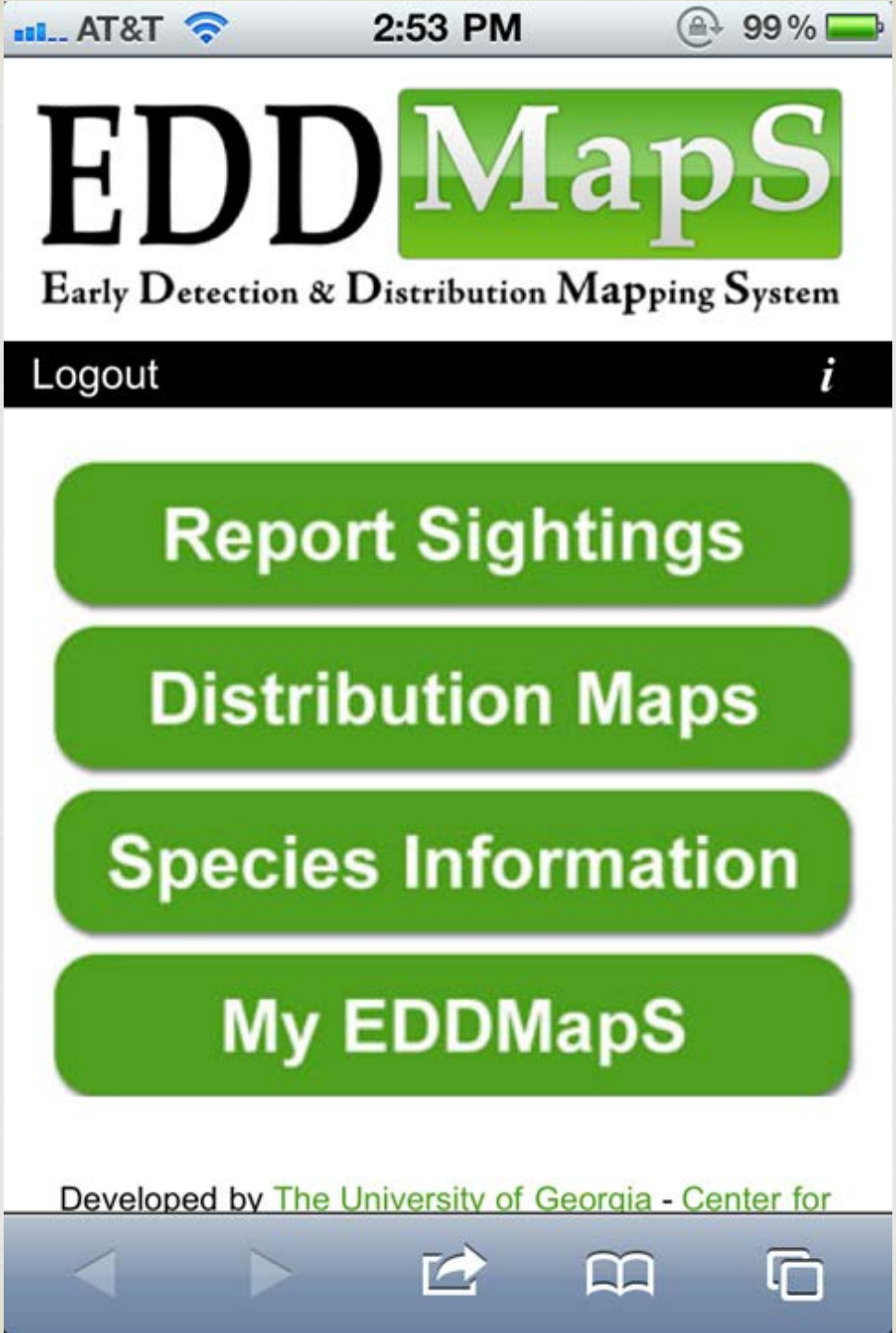
Smartphone Trend

Apps and Mobile Websites can be used to replace many tools

- Smartphones have
  - Camera
  - GPS
  - Browser
  - Applications
- Eliminates
  - Pen, Paper, Clipboard
  - GPS Unit
  - ID guides/books
  - Camera
  - Later Computer use
    - "Double Effort"

EDDMapS Mobile

- Can be accessed by most smartphones
- Mobile website for Reporting
- Identification information accessible
- Access to “My EDDMapS”


AT&T
2:53 PM
99%
EDDMapS
Early Detection & Distribution Mapping System
Logout
i
Report Sightings
Distribution Maps
Species Information
My EDDMapS
Developed by The University of Georgia - Center for

Select Region/State to Report an Invasive Species Occurrence

Southeast Exotic Pest Plant Council

Florida Invasive Species Partnership

Missouri River Watershed Coalition

Mid-Atlantic Early Detection Network


AT&T
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EDD MapS
Early Detection & Distribution Mapping System
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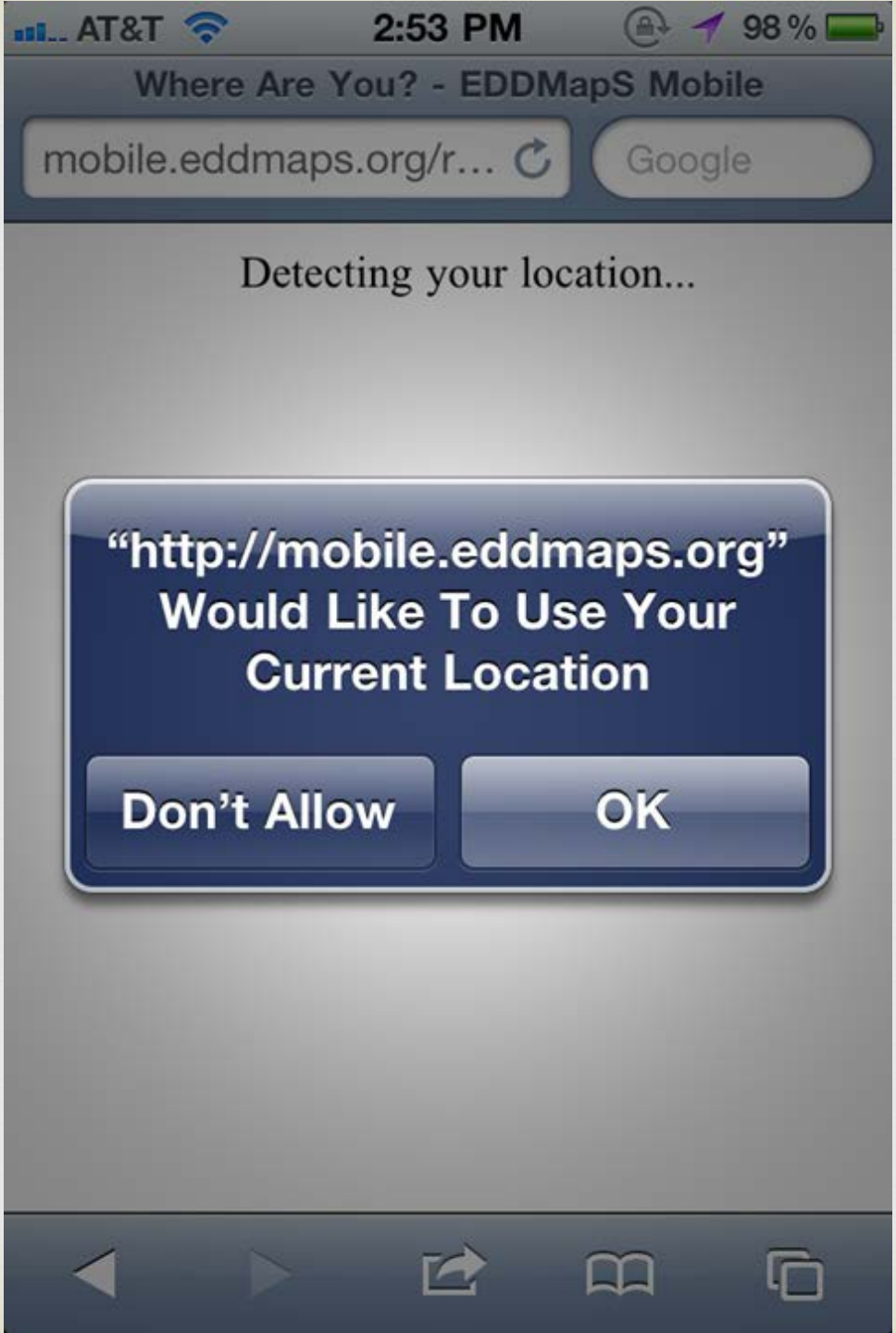
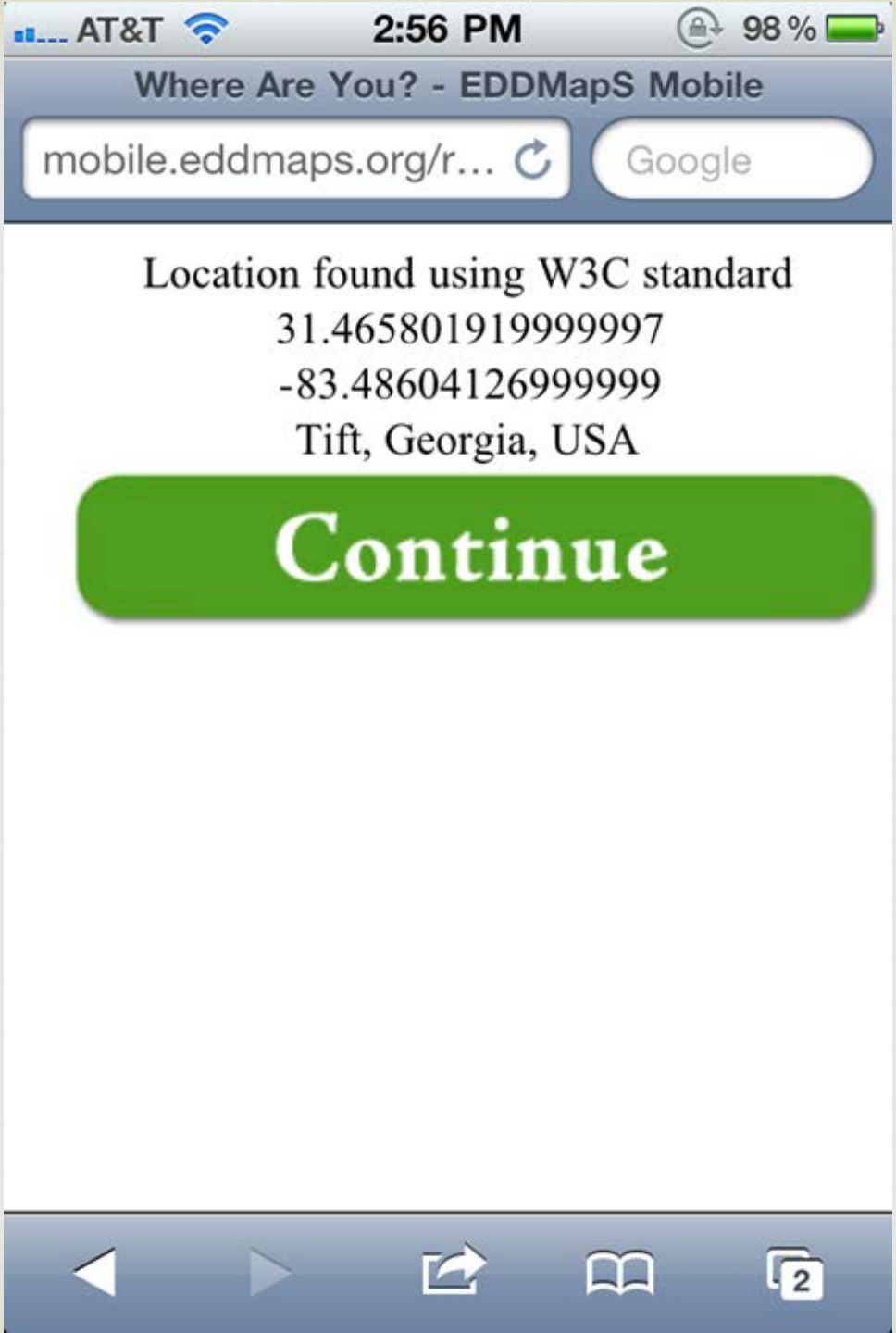
Select State to Report an Invasive Species Occurrence
Delaware
Maryland
New Jersey
New York
Pennsylvania
Virginia

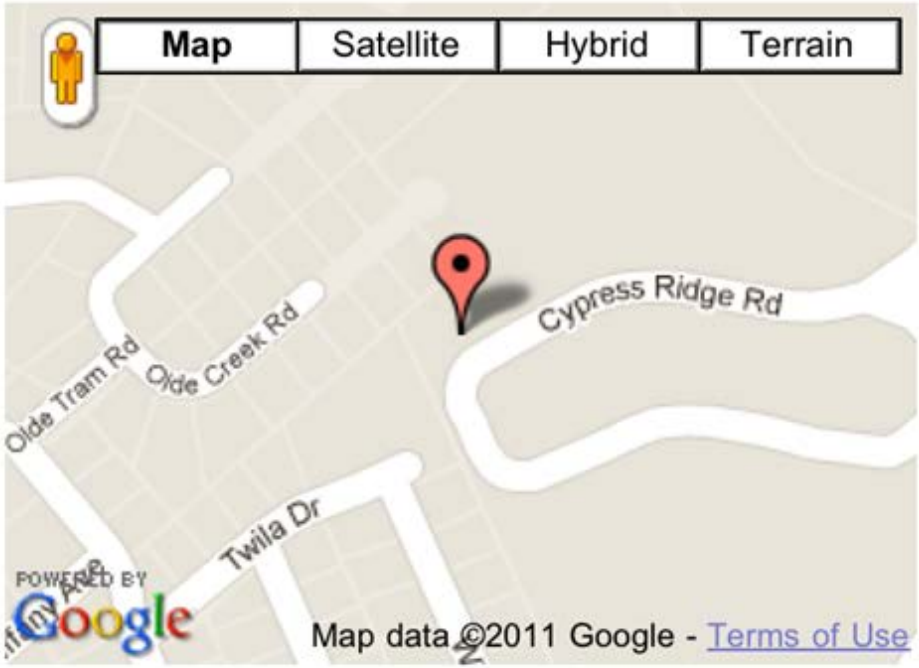

AT&T
2:53 PM
98 %
Where Are You? - EDDMapS Mobile
mobile.eddmaps.org/r…
Google
Detecting your location...
“http://mobile.eddmaps.org” Would Like To Use Your Current Location
Don’t Allow
OK


AT&T
2:56 PM
98 %
Where Are You? - EDDMapS Mobile
mobile.eddmaps.org/r...
Google
Location found using W3C standard
31.465801919999997
-83.48604126999999
Tift, Georgia, USA
Continue
2

AT&T 2:56 PM 98 %

Where Are You? - EDDMapS Mobile

mobile.eddmaps.org/r... Google



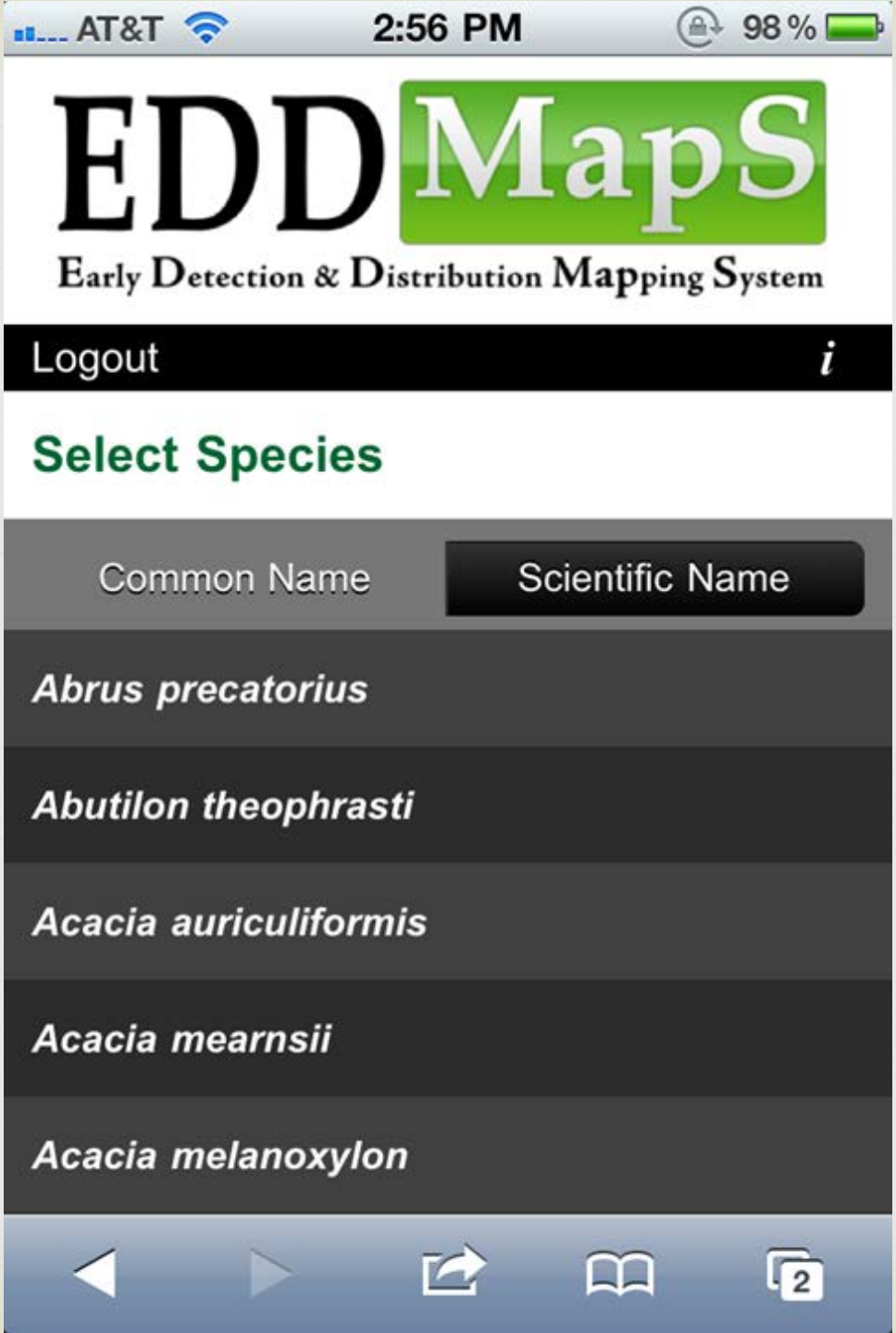
Marker status: *Click and drag the marker.*

Current position:

31.465801919999997,-83.48604126999999

Save Location

2


AT&T
2:56 PM
98 %
EDD MapS
Early Detection & Distribution Mapping System
Logout
i
Select Species
Common Name
Scientific Name
Abrus precatorius
Abutilon theophrasti
Acacia auriculiformis
Acacia mearnsii
Acacia melanoxylon
2

EDDMapS

Early Detection & Distribution Mapping System

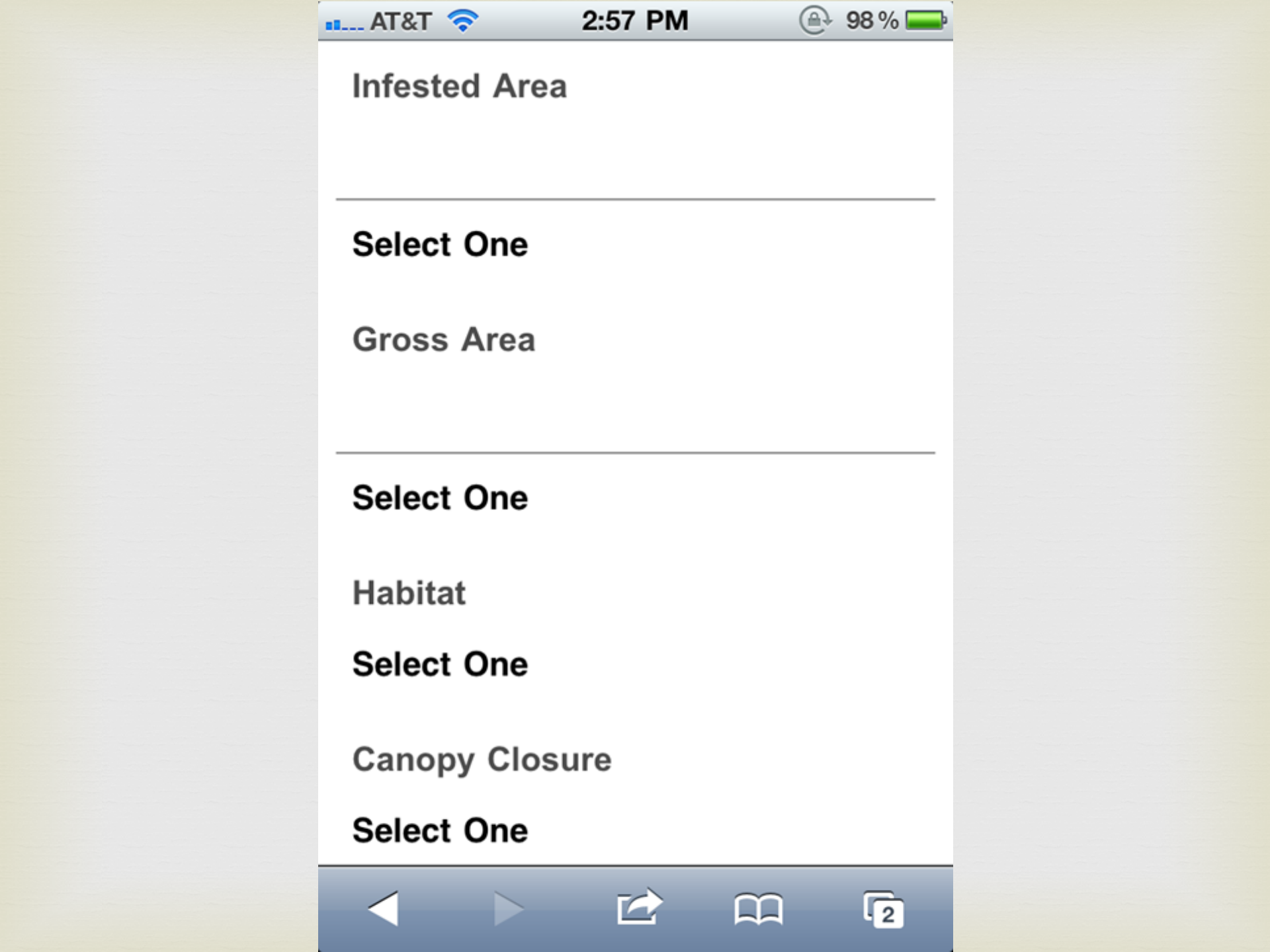
Logout *i*

Report an Invasive Species Occurrence

Species:
tree-of-heaven
Ailanthus altissima

Observation Date:
07/31/2011

Infested Area


AT&T
2:57 PM
98 %
Infested Area
Select One
Gross Area
Select One
Habitat
Select One
Canopy Closure
Select One
2

Select One

Save your images and upload them from you computer

Comments:

Report

EDDMapS

Early Detection & Distribution Mapping System

Logout *i*

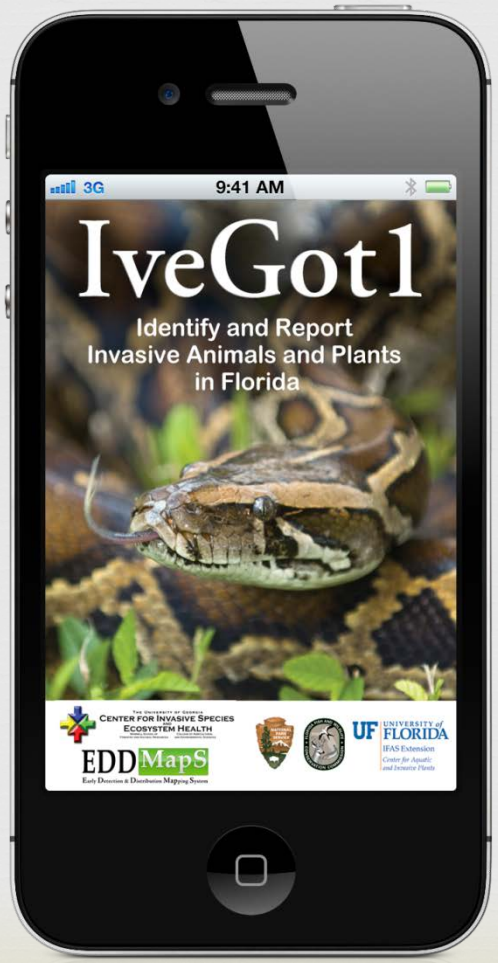
Thank You for Your Submission to EDDMapS.

You report has been forwarded to your state and/or county verifier for review.
Your report will display on EDDMapS as "Not Verified" until it is reviewed.

Your Record ID is 1816977

IveGot1 iPhone App

- Developed by CISEH in cooperation with National Park Service, Florida Fish and Wildlife Conservation Commission, and University of Florida
- Non-native animals and native look-alikes
- Non-native plant and animal reporting



AT&T 10:04 AM 98 %

Report an Animal

Achatina fulica
Giant African land snail

Agama agama africana
African redhead agama

Agkistrodon piscivorus
Cottonmouth

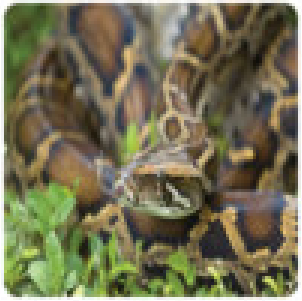
Alopochen aegyptiacus
Egyptian geese

Ameiva ameiva
South American ground lizard

Amia calva
Bowfin

Anolis equestris equestris
Knight anole

Animals Plants Upload Maps More



Burmese python

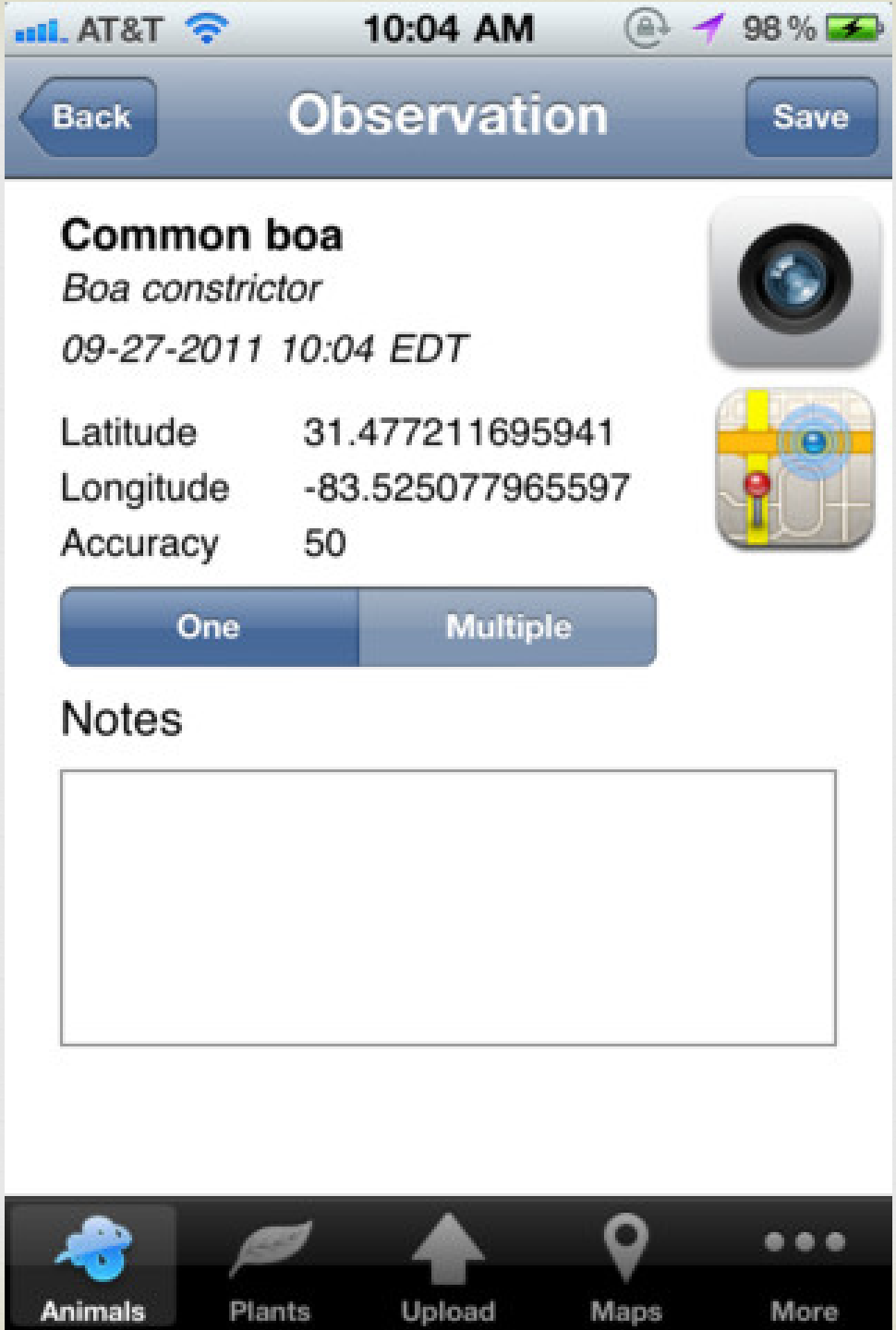
Python molurus ssp. bivittatus

Status: Nonnative, Invasive

Length: Maximum length 25 feet

Body: Not as stout as other python species

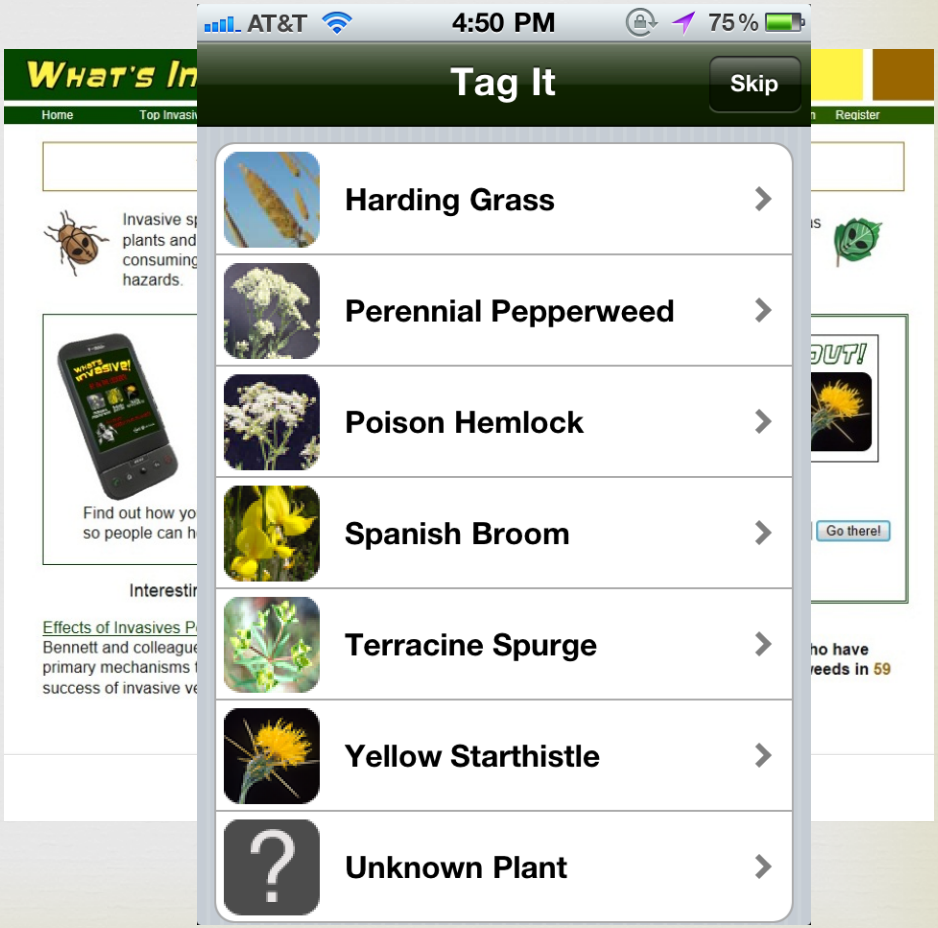
Pattern: Network of dark blotches along back and sides (like the pattern of a giraffe); blotches are irregular, not net-like, diamond-


AT&T
10:04 AM
98 %
Back
Observation
Save
Common boa
Boa constrictor
09-27-2011 10:04 EDT
Latitude 31.477211695941
Longitude -83.525077965597
Accuracy 50
One
Multiple
Notes
Animals
Plants
Upload
Maps
More


AT&T
10:06 AM
98 %
Back
Animals
Map
Satellite
Jacksonville
Palm Coast
Daytona Beach
Deltona
Titusville
Orlando
Merritt Island
Palm Bay
Tampa
Port St Lucie
Sarasota
Naples
Weston
Fort Lauderdale
Miami
2
3
2
7
13
4
322
Animals
Plants
Animals
Plants
Upload
Maps
More

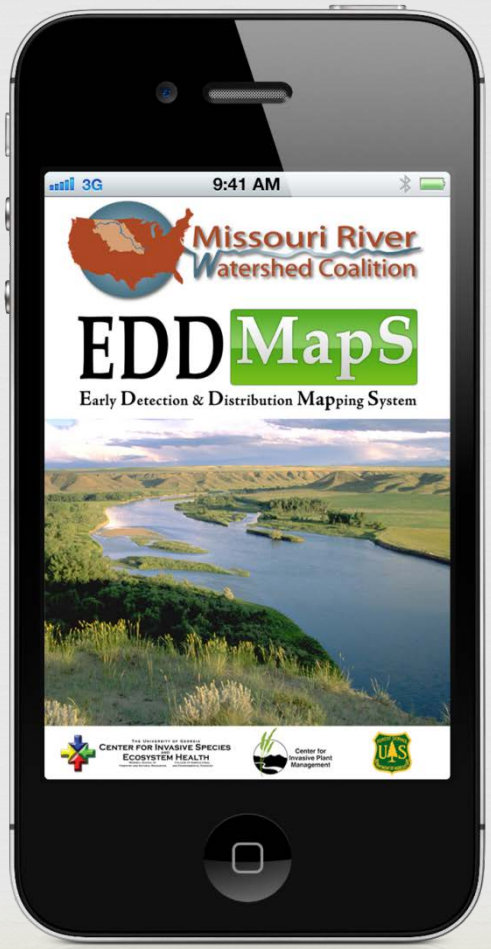
What's Invasive - App

- Website integration
  - Data aggregated into EDDMapS
  - CISEH hosting website
- Site based reporting
- Non-Native Animal and Plant reporting
- iPhone App
- Android App



MRWC – iPhone App

- Missouri River Watershed Coalition
- Covers specific states
  - MRWC states
    - CO, MT, NE, ND, SD, WY
  - Partner States
    - ID, NV, OR, UT, WA, MO
- New or potential invaders
- Reporting and maps for those states
- Alerts coordinators for those states



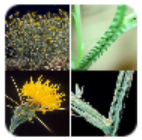
AT&T 11:27 AM 82%

Report a Plant

Alhagi pseudalhagi
Camelthorn

Alliaria petiolata
Garlic mustard

Butomus umbellatus
Flowering rush



Centaurea solstitialis
Yellow starthistle

Centaurea virgata
Squarrose knapweed

Chondrilla juncea
Rush skeletonweed

Crupina vulgaris
Common crupina

Plants Upload Maps Settings More

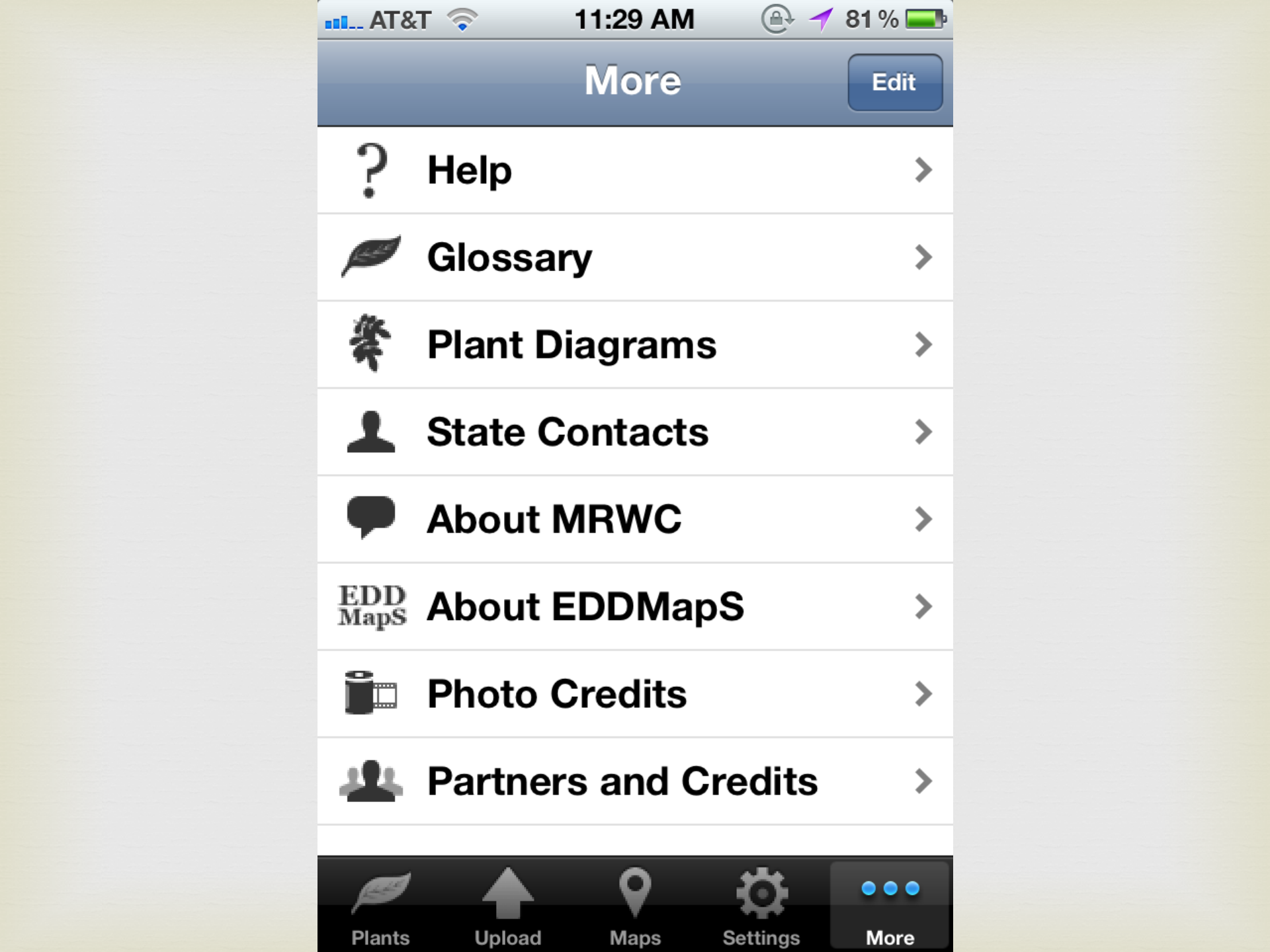
Garlic mustard

Alliaria petiolata

Also Known As / Hedge garlic, poor man's mustard, garlic root, garlic wort, mustard root

General Description / Garlic mustard is a biennial herb that is native to Europe. It can quickly form dense stands that displace native plants and wildlife, and produces allelopathic compouds that inhibit the growth of other species. Garlic mustard often grows alongside similar looking plants but can be

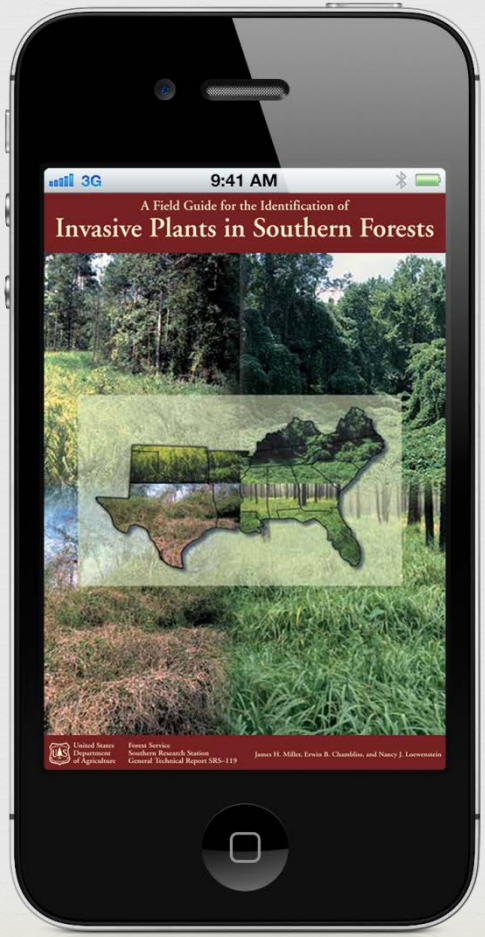


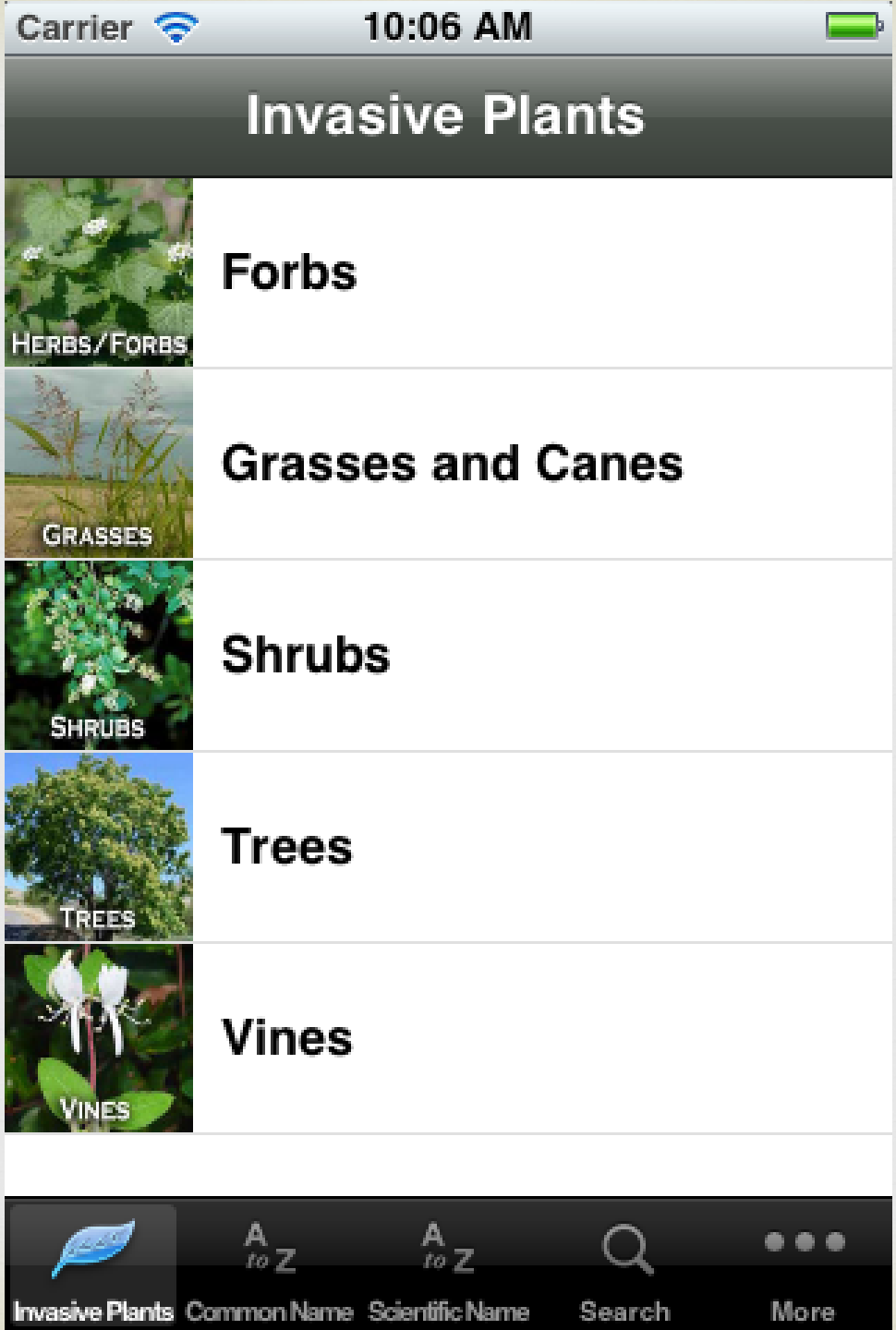


AT&T
11:29 AM
81 %
More
Edit
Help
Glossary
Plant Diagrams
State Contacts
About MRWC
About EDDMapS
Photo Credits
Partners and Credits
Plants
Upload
Maps
Settings
More

Invasive Plants in Southern Forests

- Includes all text and images from field guide
- Includes pdf of "A Management Guide for Invasive Plants in Southern Forests"
- Links to the EDDMapS Mobile distribution maps

- Reporting will be added

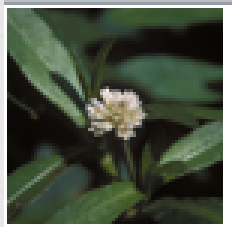



Carrier
10:06 AM
Invasive Plants
Herbs/Forbs
Forbs
Grasses
Grasses and Canes
Shrubs
Shrubs
Trees
Trees
Vines
Vines
Invasive Plants
A to Z
Common Name
A to Z
Scientific Name
Search
More

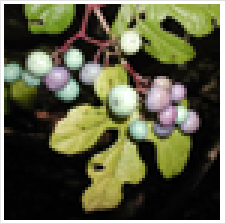
Carrier 10:07 AM

Common Name

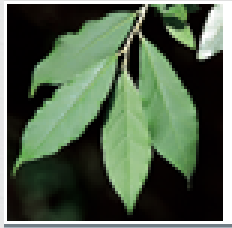
A



Alligatorweed
Alternanthera philoxeroides

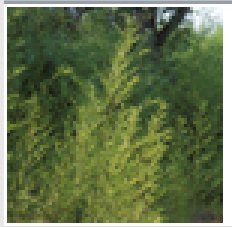


Amur Peppervine
Ampelopsis brevipedunculata

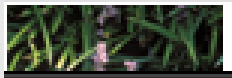


Autumn Olive
Elaeagnus umbellata

B



Bamboos
Phyllostachys aurea



A B C D E F G H I J K L M N O P Q R S T U V W X Y Z #

Invasive Plants | Common Name | Scientific Name | Search | More

Carrier 10:07 AM

Scientific Name

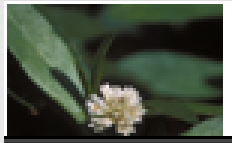
A

Ailanthus altissima
Tree-of-Heaven

Akebia quinata
Chocolate Vine

Albizia julibrissin
Mimosa

Alliaria petiolata
Garlic Mustard



Alternanthera philoxeroides

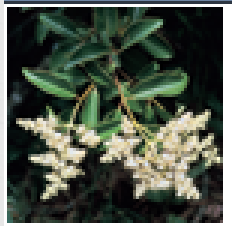
A B C D E F G H I J K L M N O P Q R S T U V W X Y Z #

Invasive Plants | Common Name | Scientific Name | Search | More

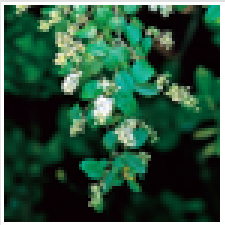
Carrier 10:08 AM

Search

privet Cancel



Glossy and Japanese Privet
Ligustrum spp.



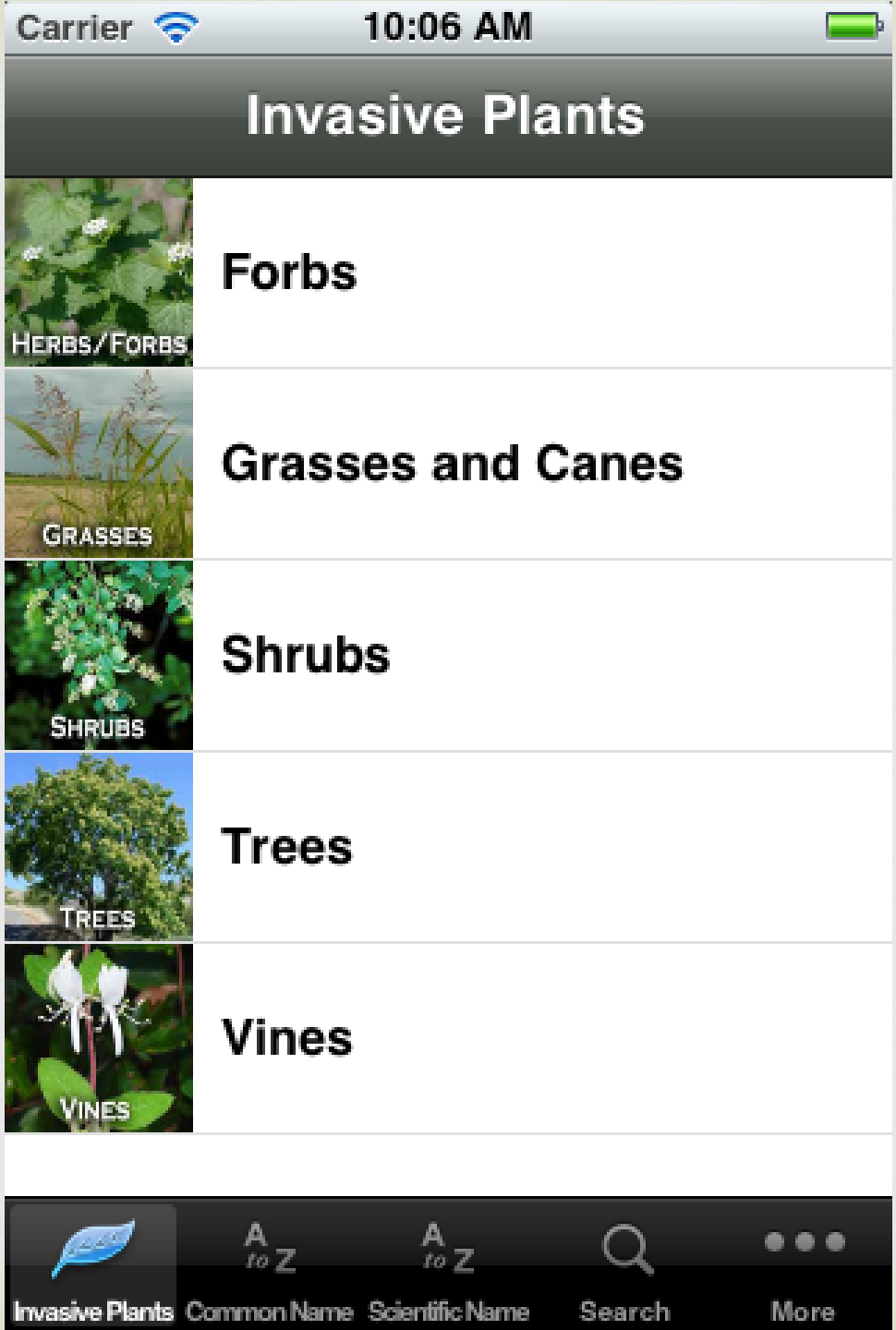
Privet
Ligustrum spp.

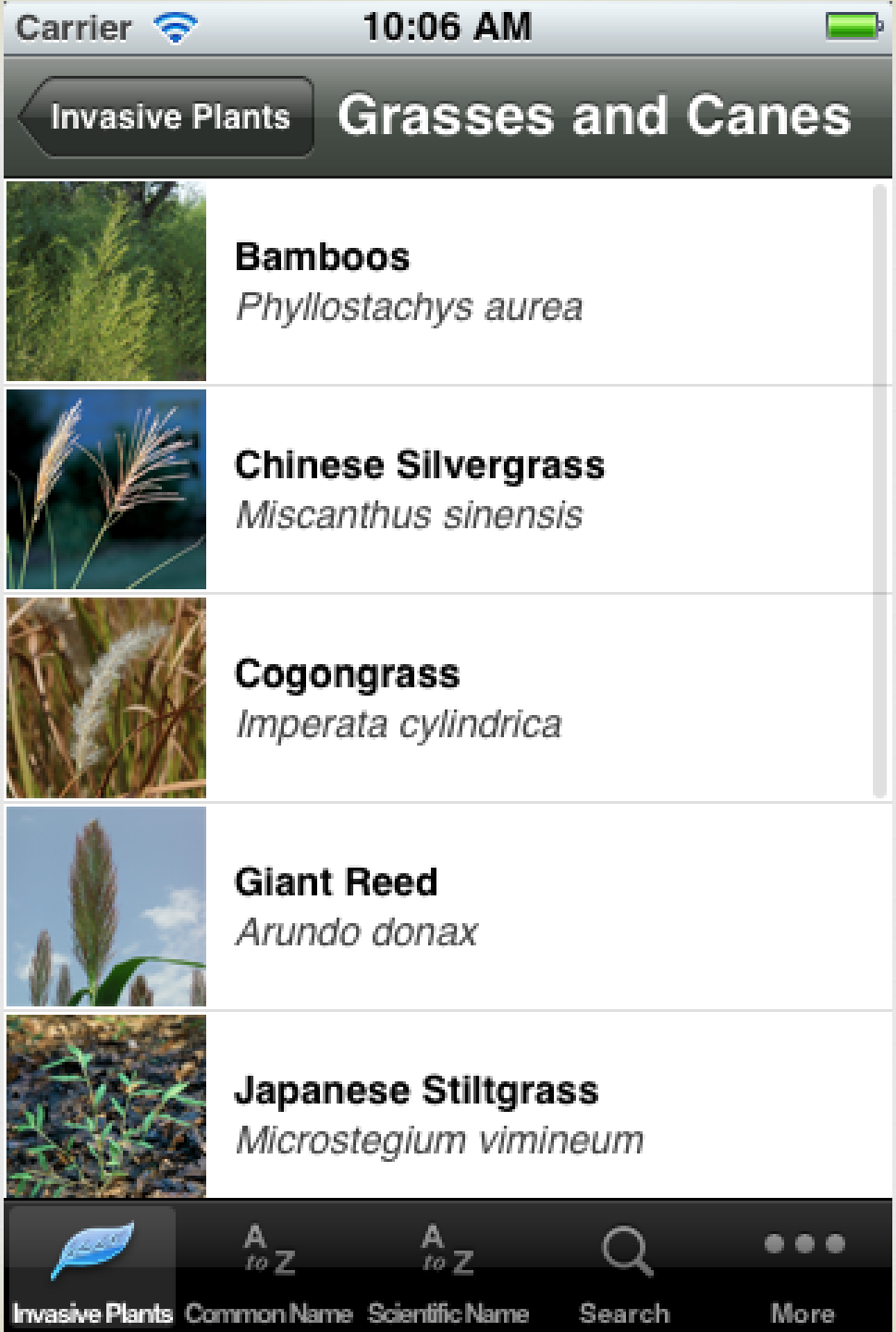
Q W E R T Y U I O P

A S D F G H J K L

Z X C V B N M

.?123 space Search


Carrier
10:06 AM
Invasive Plants
Herbs/Forbs
Forbs
Grasses
Grasses and Canes
Shrubs
Shrubs
Trees
Trees
Vines
Vines
Invasive Plants
A to Z
Common Name
A to Z
Scientific Name
Search
More


Carrier
10:06 AM
Invasive Plants
Grasses and Canes
Bamboos
Phyllostachys aurea
Chinese Silvergrass
Miscanthus sinensis
Cogongrass
Imperata cylindrica
Giant Reed
Arundo donax
Japanese Stiltgrass
Microstegium vimineum
Invasive Plants
A to Z
Common Name
A to Z
Scientific Name
Search
More

Carrier 10:06 AM

Grasses and Canes

Cogongrass

February - S. Enloe

Images | Information | Control | Distribution | Report

Carrier 10:07 AM

Grasses and Canes

Cogongrass

Images | Information | Control | Distribution | Report


Carrier
10:07 AM
C. Evans

Cogongrass

Imperata cylindrica

Plant

Aggressive, colony-forming dense perennial grass 1 to 6 feet (30 to 150 cm) in height, often leaning in mats when over 3 feet (90 cm) in height. Stemless tufts of long leaves, blades yellow green, with off-center midveins. Silver-plumed flower and seed heads in late winter (south) through early summer (north). Plants arising from branching sharp-tipped white-scaly rhizomes. Federal noxious weed.

Management strategies

Do not plant the red-tipped cultivars (Japanese bloodgrass and Red Baron). Remove prior plantings, and control sprouts and seedlings.

Treat when new plants are young and located through frequent surveillance of lands in infested zones.

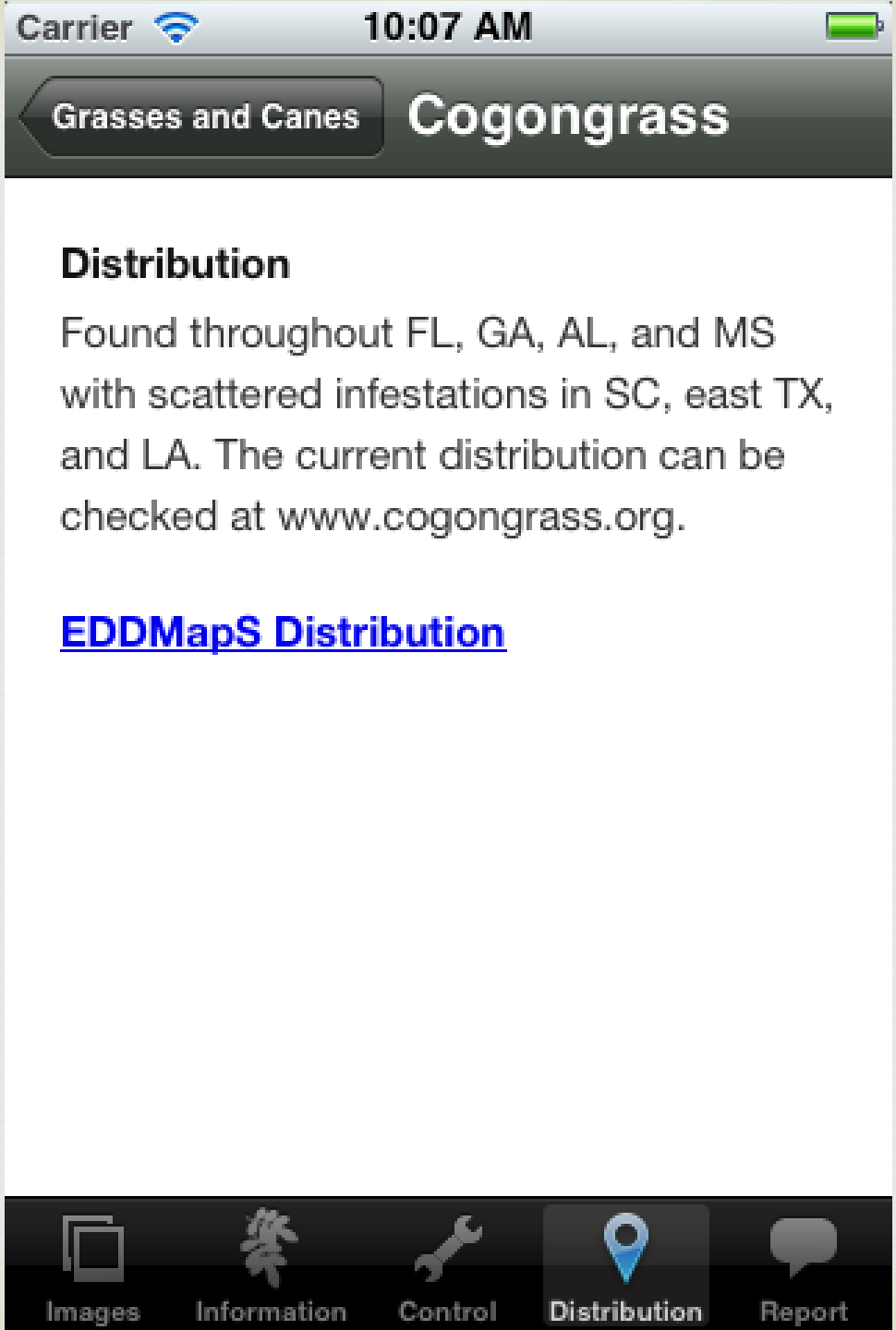
Minimize disturbance within miles of where this plant occurs, and anticipate wider occupation when plants are present or adjacent before disturbance.

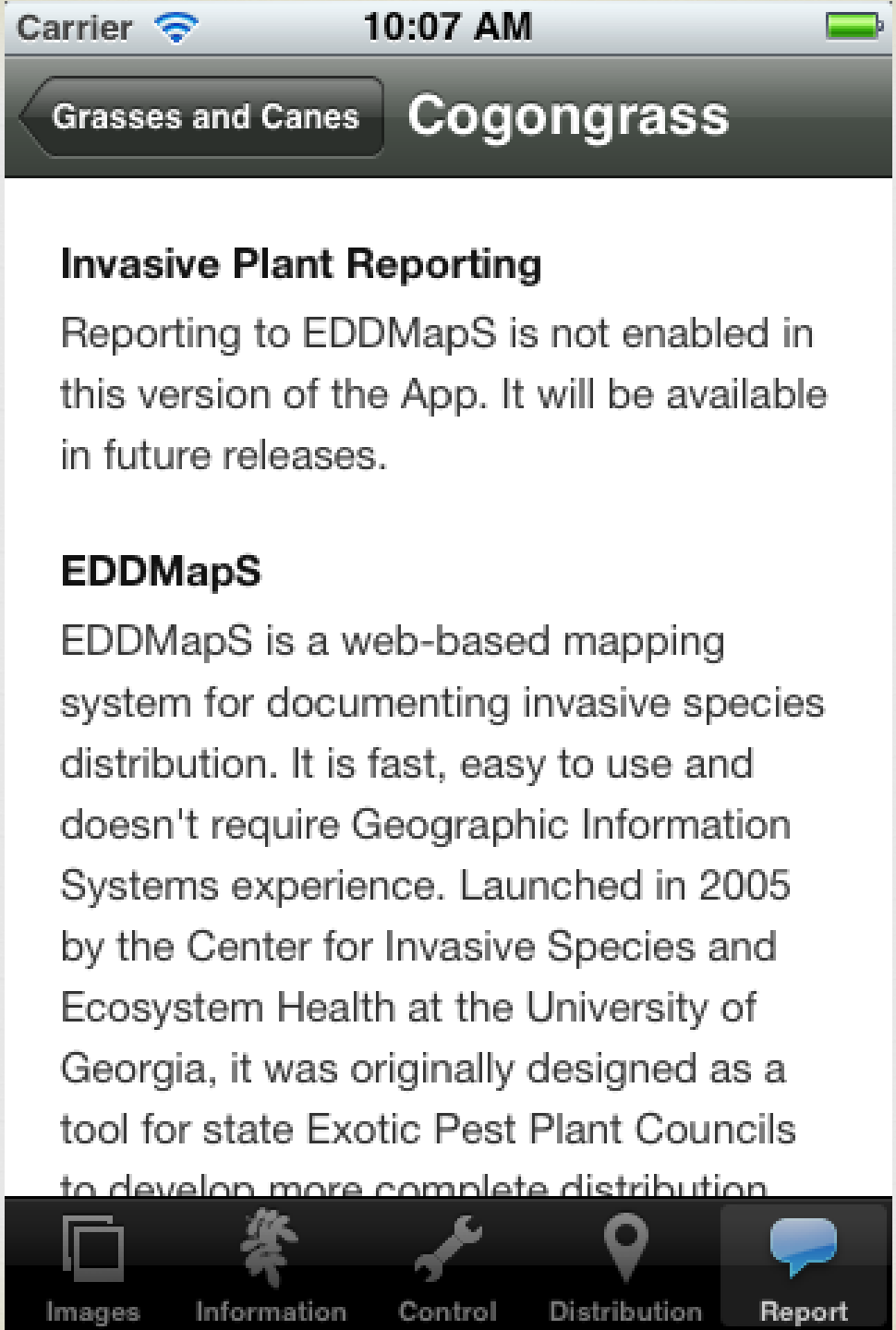
Repeated cultivation and planting of

Cogongrass

Recommended control procedures

Thoroughly wet all leaves with one of the following herbicides in water with a surfactant when grass is actively growing and at least 1to 2 feet high or older growth from June to September: Chopper Gen2* as a 2-percent solution (8 ounces per 3-gallon mix) or Arsenal AC* as a 1-percent solution (4 ounces per 3-gallon mix). Repeat applications in subsequent years may be required for eradication. A glyphosate herbicide may be tank mixed as a 2- to 5-percent solution with Chopper Gen2* at 2 percent (8 ounces per 3-gallon mix) or Arsenal


Carrier
10:07 AM
Grasses and Canes
Cogongrass
Distribution
Found throughout FL, GA, AL, and MS with scattered infestations in SC, east TX, and LA. The current distribution can be checked at www.cogongrass.org.
EDDMapS Distribution
Images
Information
Control
Distribution
Report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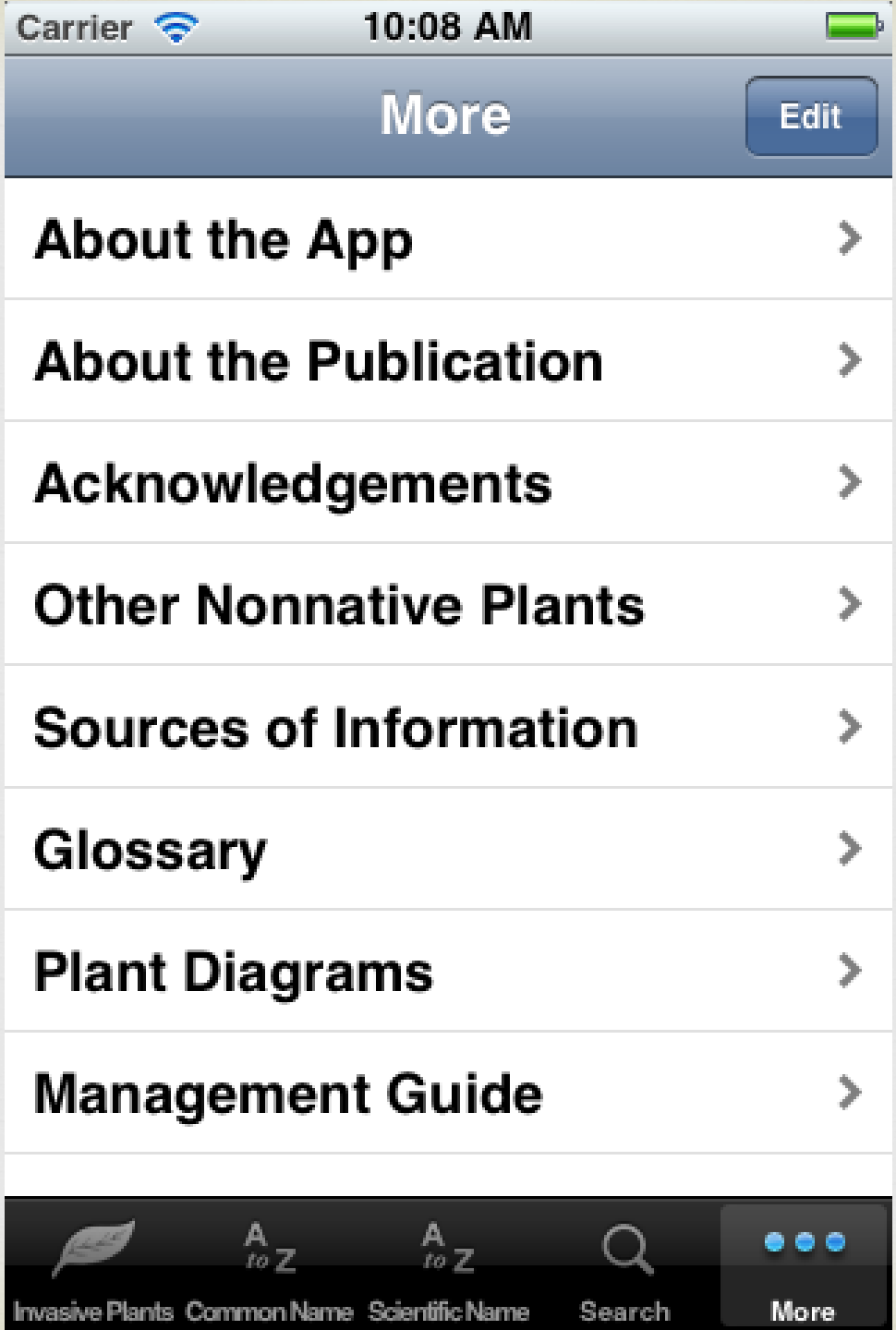
Grasses and Canes
Cogongrass
Invasive Plant Reporting
Reporting to EDDMapS is not enabled in this version of the App. It will be available in future releases.
EDDMapS
EDDMapS is a web-based mapping system for documenting invasive species distribution. It is fast, easy to use and doesn't require Geographic Information Systems experience. Launched in 2005 by the Center for Invasive Species and Ecosystem Health at the University of Georgia, it was originally designed as a tool for state Exotic Pest Plant Councils
Images
Information
Control
Distribution
Report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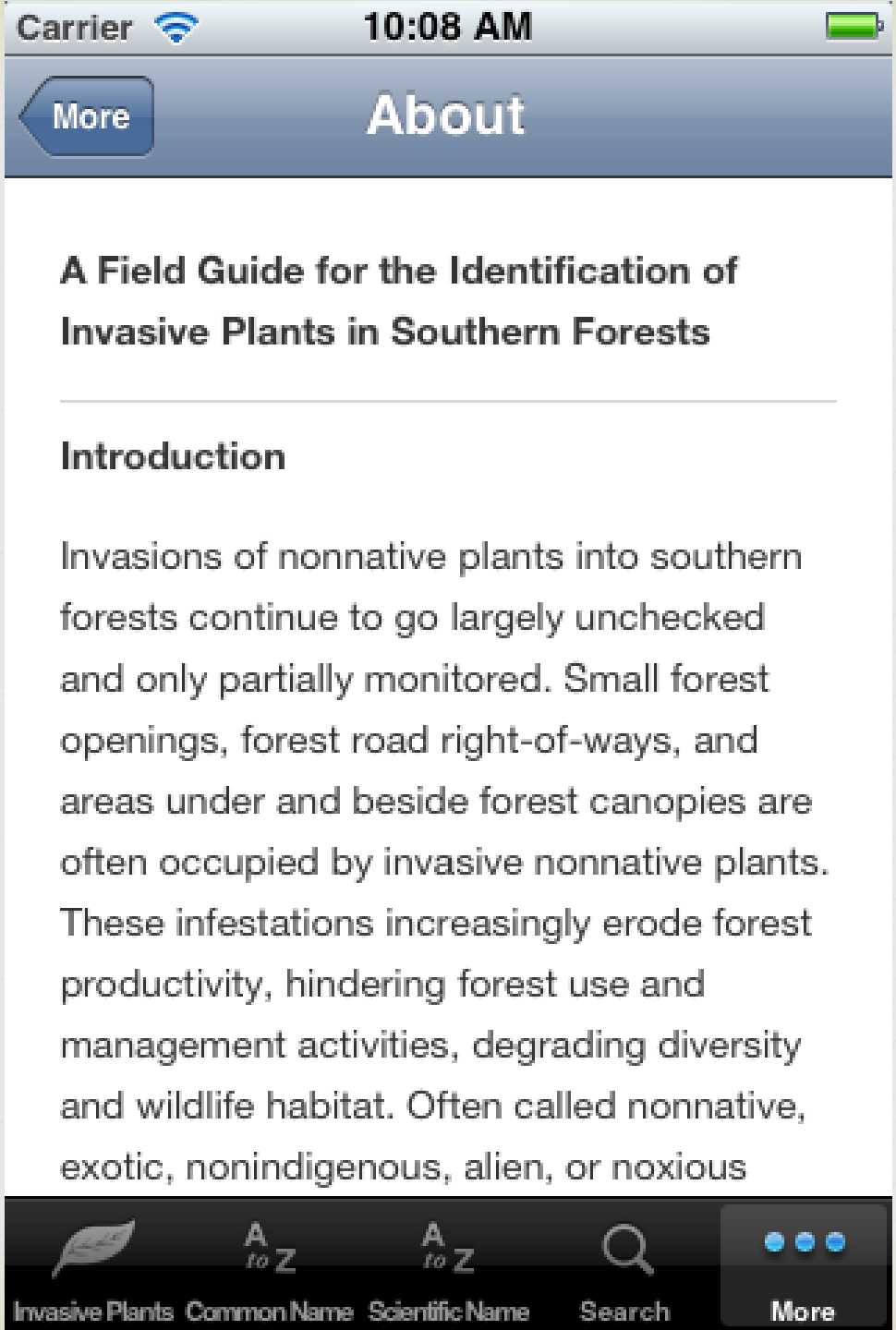
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About
A Field Guide for the Identification of Invasive Plants in Southern Forests
Introduction
Invasions of nonnative plants into southern forests continue to go largely unchecked and only partially monitored. Small forest openings, forest road right-of-ways, and areas under and beside forest canopies are often occupied by invasive nonnative plants. These infestations increasingly erode forest productivity, hindering forest use and management activities, degrading diversity and wildlife habitat. Often called nonnative, exotic, nonindigenous, alien, or noxious
Invasive Plants
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Other Nonnative Plants Invading Southern Forests and Their Margins, Openings, Waterway Margins, Wetlands, and Stream, River, and Lake Banks

(species on the Federal Noxious Weed List are denoted by "FED")

Invasive Trees

Common Name:	Scientific Name:
Earleaf acacia (FL only)	*Acacia auriculiformis* A. Cunn. ex Benth.
Amur maple	*Acer ginnala* Maxim.
Norway maple	*Acer platanoides* L.
Woman's tongue (FL and TX only)	*Albizia lebbeck* (L.) Benth.
Deviltree (FL only)	*Alstonia macrophylla* Wall. ex G. Don
Edible fig	*Ficus carica* L.
Chinese parasoltree	*Firmiana simplex* (L.) W. Wight
Paradise apple	*Malus pumila* Mill.
Melaleuca (FL and LA only) FED	*Melaleuca quinquenervia* (Cav.) Blake
White mulberry	*Morus alba* L.
Japanese black pine	*Pinus thunbergii* Parl.
White poplar	*Populus alba* L.
Lombardy poplar	*Populus nigra* L.
Sweet cherry	*Prunus avium* (L.) L.
Cherry plum (TN only)	*Prunus cerasifera* Ehrh.
Sour cherry	*Prunus cerasus* L.
European plum (TX only)	*Prunus domestica* L.
Cherry laurel	*Prunus laurocerasus* L.
Perfumed cherry, Maheleb	*Prunus mahaleb* L.
Sawtooth oak	*Quercus acutissima* Carruthers
Rose myrtle (FL only)	*Rhodomyrtus tomentosus*(Aiton) Hassk.
Octopus tree, schefflera (FL only)	*Schefflera actinophylla* (Endl.) Harms
Peruvian peppertree (TX and FL only)	*Schinus molle* L.
Java plum	*Syzygium cumini* (L.) Skeels
African tamarisk (TX, LA, and SC)	*Tamarix africana* Poir.
Russian tamarisk	*Tamarix aralensis* Willd.

Sources of Identification Information

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Smith, Tim E., ed. 1993. Missouri vegetation management manual. Jefferson City, MO: Missouri Department of Conservation, Natural History Division. 148 p.

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Glossary of Important Terms

achene: a small, dry, nonsplitting fruit with a single seed, common to grasses, asters, and nut-rushes.

acute tip: terminating in a sharp or well-defined point, with more or less straight sides.

allelopathic: referring to a plant known to emit chemicals that retard the growth or seed germination of associated plants.

alternate leaves: one leaf at each node and alternating on sides of the stem or their points of attachment forming a spiral up the stem.

annual: a plant that germinates, flowers, produces seed, and dies within one growing season.

anthers: the pollen-producing portion of the stamen or male reproductive part of a flower.

appressed: lying close to or flattened against.

arbor: vine entanglement within the crowns of shrubs or trees.

ascending: tending to grow upward, slightly leaning to somewhat erect.

asymmetric: not identical on both sides of a central line.

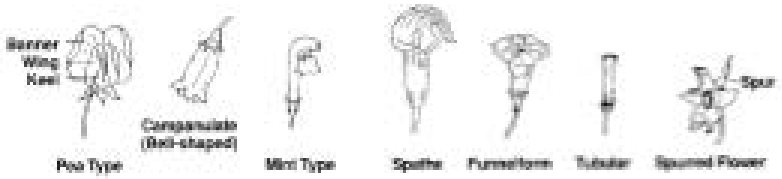
axil: the angle formed between two structures, such as between a leaf and the stem.

axillary: located in an axil or angle.

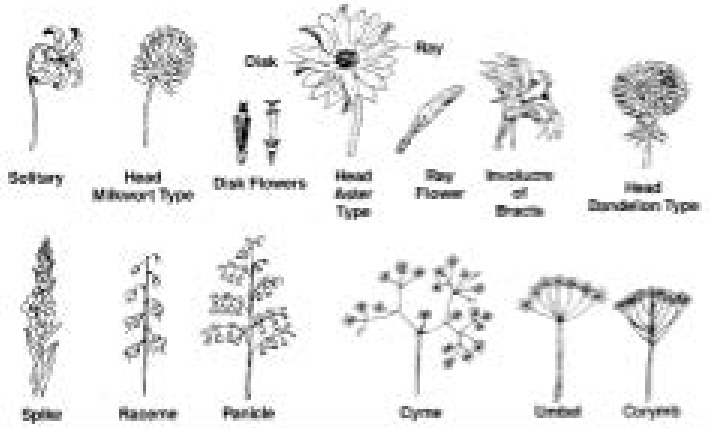
berry: a fleshy or pulpy fruit from a single ovary with one to many embedded seeds, such as tomato and grape.

FLOWER PARTS

FLOWER TYPES



INFLORESCENCES



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More **Management Guide**

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A Management Guide for Invasive Plants in Southern Forests

James H. Miller, Steven T. Manning, and Stephen P. Enloe

United States Department of Agriculture • Forest Service • Southern Research Station
General Technical Report SRS-131

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App or Mobile Site?

- App doesn't require cellular access
- Cannot upload pictures to mobile site from iPhone

- App requires submission and approval from Apple
- Users must download updates


Questions?