

TEXASINVASIVES.ORG

HELLO INVASIVE SPECIES.
GOODBYE TEXAS.

Citizen Scientists, CISMAs and Invasives, Oh My!

October 30, 2018

Gulf and South Atlantic Regional Panel on Aquatic Invasive Species
San Antonio, TX

Hans Landel, Ph.D.

Invasive Species Program Coordinator
Lady Bird Johnson Wildflower Center

PARTNERS



Today

Introduction to **Invaders of Texas** citizen science program

Update on **CWMAs/CISMAs** in Texas



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Thank you!

- USDA-APHIS (Farm Bill)
- Texas Parks and Wildlife Department
- Texas A&M Forest Service
- Lady Bird Johnson Wildflower Center
- Texas Invasive Plant and Pest Council

PARTNERS



Introduction to the **Invaders of Texas** Program

Invaders of Texas

a Citizen Science program of the Lady Bird Johnson Wildflower Center

- **Train** a cadre of citizen scientists to find and report locations of selected invasive plant species in Texas
- Move target audience beyond awareness to **action** on invasive species
- Produce a **usable database**

History:

- Established in 2005
- Covers all of Texas
- Managed by the Lady Bird Johnson Wildflower Center

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Integrated components:

- **Citizen science program**
- Early detection and rapid response (EDRR) system
- Website
- Mobile app
- Facebook page
- Monthly e-newsletter
- Outreach

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- A partnership between the Texas Forest Service, USDA-APHIS, Texas Parks and Wildlife Department, and others.
- Designed to present a coordinated approach to address invasive species throughout Texas.

Goals

- **Facilitate communication** among the state's invasive species stakeholders
- **Implement a coordinated response** to address invasive species issues on a statewide level
- Provide a venue for **sharing information** about key invasive strategies
- Create **public awareness** of the problems posed by invasive species in Texas

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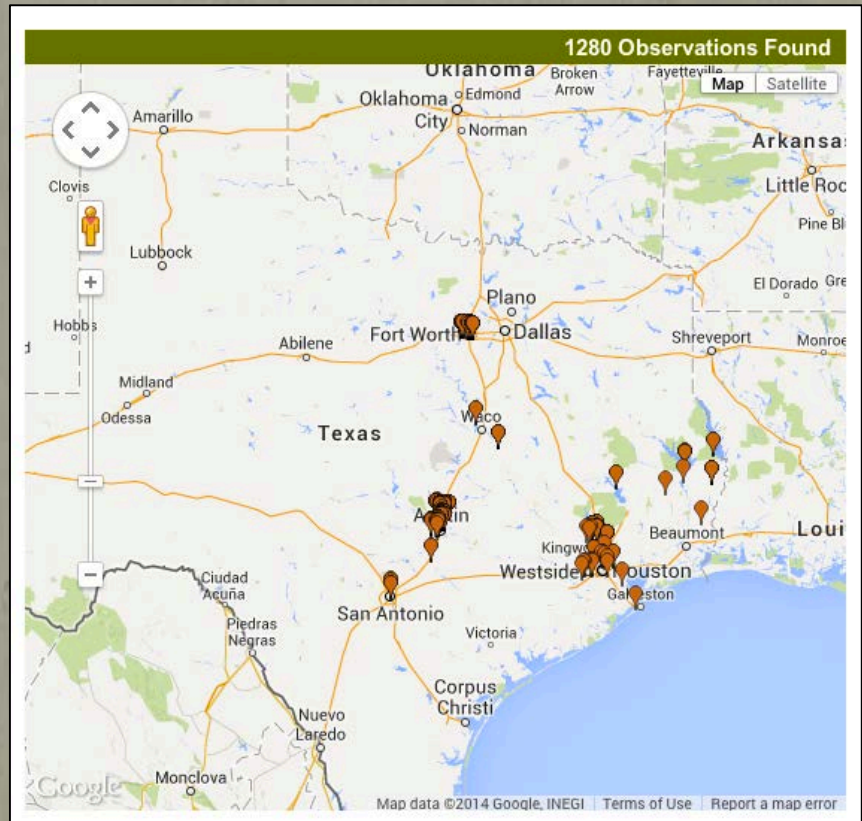
Texas Invasive Plant & Pest Council (TIPPC)

- The Council is comprised of stakeholders from government agencies, conservation organizations, academia, green industry and the public to form one unified body in addressing the threat of invasive species.
- TIPPC seeks to:
 - promote understanding and awareness
 - to provide a forum for the exchange of information
 - support research and restoration activities that reduce impacts of invasive plants and pests in Texas.

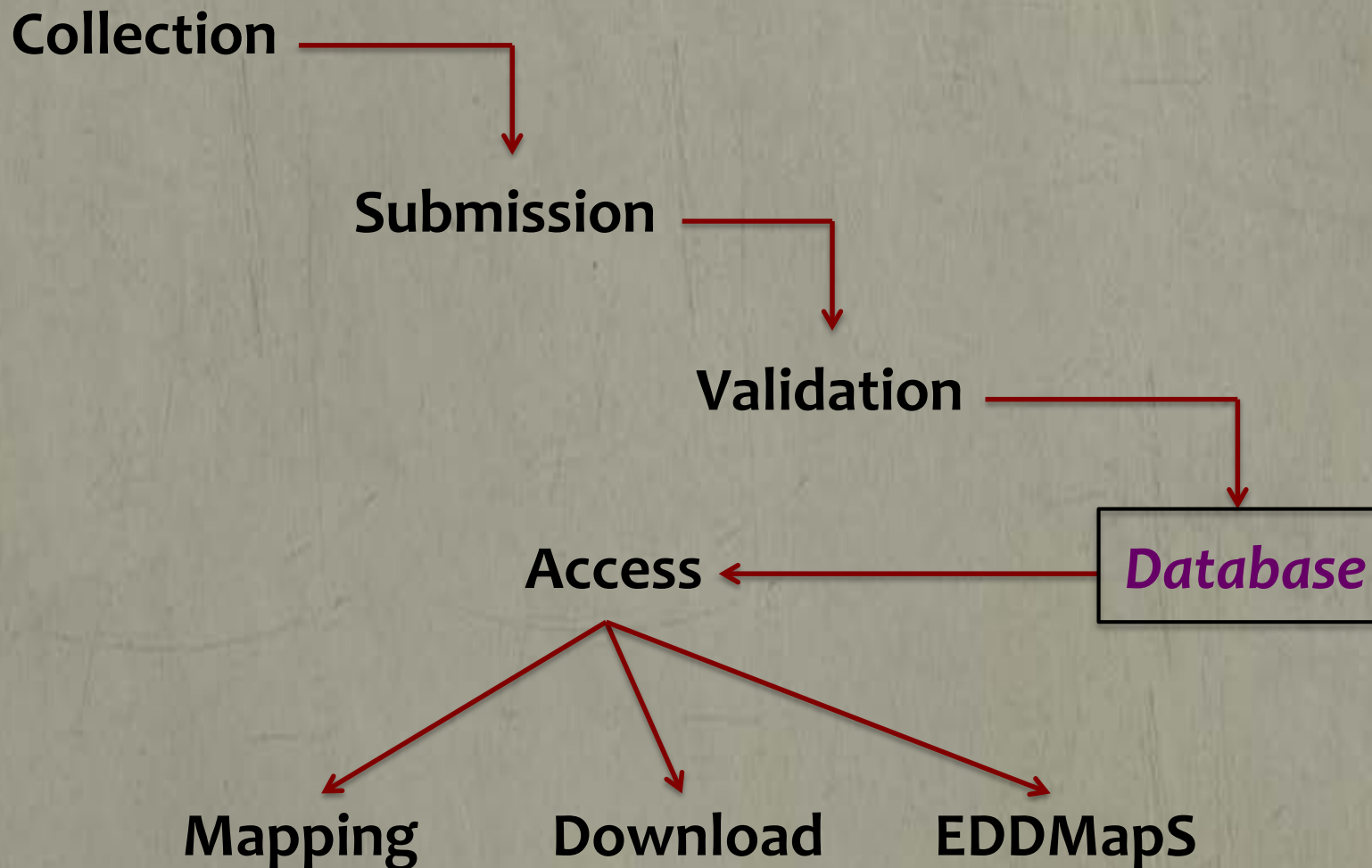


Invaders of Texas

Satellite Groups and Voyagers



Gathering Data



Invaders of Texas Data Data Collection

iOS: Texas Invaders

Android: Texas Invasives

Built by the Center for Invasive
Species and Ecosystem Health

Observation Form

Observer: _____ (leave blank for a volunteer to enter)

Satellite: _____ (your satellite)

Collector: _____ (your name)

Species Name or Code: _____ (e.g. AIAL or Texas altissima)

Date: _____

Time Spent* (circle one): 5 15 30 45 60 90 120 180 240 360

*Total time spent on an observation in minutes. If first or last observation for day, include time needed to travel to or from site.

GPS Coordinates (in decimal degrees)

Latitude: _____ (e.g. 32.74462, positive indicates Northern hemisphere)

Longitude: _____ (e.g. -097.67281, negative indicates Western longitude)

Disturbance (circle one):
 Fire _____ Graded _____ Cleared Brush _____ Pruned _____ Cropland _____ Ruminant _____ Other _____ None _____

Patch Type (circle one):
 Linear (plants extending along a line) _____ Polygon (of non-linear shape) _____

Notes: Include a description of the observation site and any other relevant information.

Images - For verification purposes, take several close up digital images of the species and record the file names of the images below so you can refer to them during image upload.

Species Image (Close up View):

Consent: I (We), the undersigned, give consent to volunteers from the Invaders of Texas Citizen Science program to conduct surveys of invasive species on property that we own or manage and to use site specific information in the preparation of reports including sharing data and publication of survey results on the www.texasinvasives.org website.

Landowner or Authorized Agent: _____ Date: _____

Invaders of Texas

WELCOME CITIZEN SCIENTISTS

BECOME A CITIZEN SCIENTIST

TOOLKIT

SATELLITES

WORKSHOPS

KEEP INFORMED

Invaders of Texas

STEP 1: UPLOAD IMAGE

Click the Choose File button to select the image you want to upload for this species observation. After the file name appears, click Upload.

Fill out the form below using your data collection sheet as a guide. When you are satisfied with your data entry, click Insert Observation.

Collection Date: _____

Collection Time: _____

GPS Coordinates: Please enter GPS coordinates as Left/Long decimal degrees. [Click Us](#) if you need help setting your GPS receiver. If you don't have a GPS receiver, you can find your coordinates on a Google Map by using the Choose Location feature. The Negative indicates Western longitude.

Choose Location

Latitude: _____ in decimal degrees (e.g. 32.74462)

Longitude: _____ in decimal degrees (e.g. -07.67281)

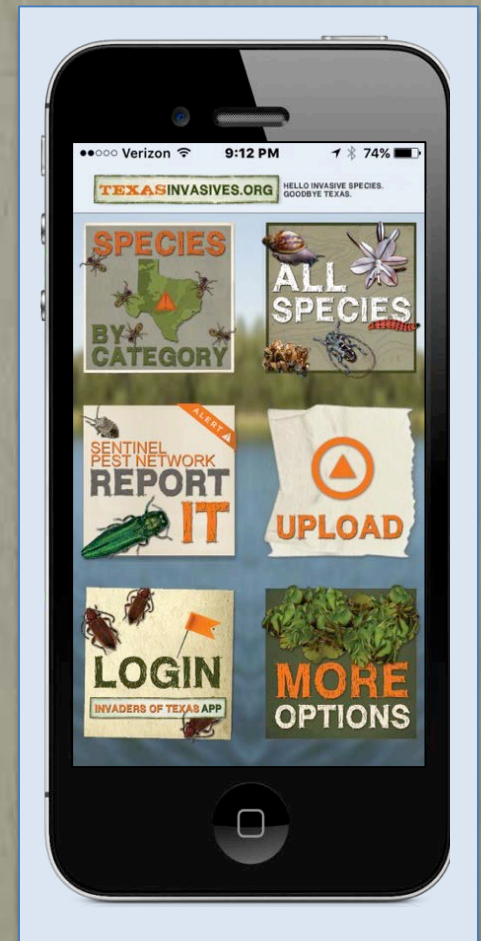
Disturbance: [Select Disturbance]

Patch Type: [Select Patch]

Abundance: [Select Abundance]

Notes: Please include location details so that we may verify your GPS coordinates plus any other information about the species observation that is relevant.

Insert Observation or Reset Form



Invaders of Texas Data Detection Database

Tracks species observations submitted by volunteers.

Provides the public with full access to citizen science data.

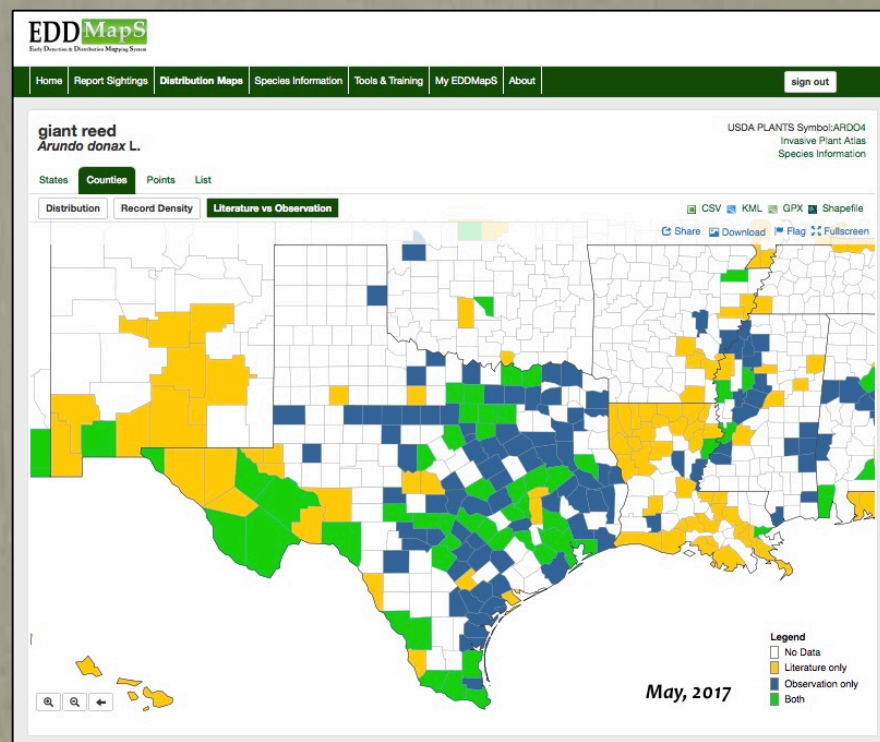
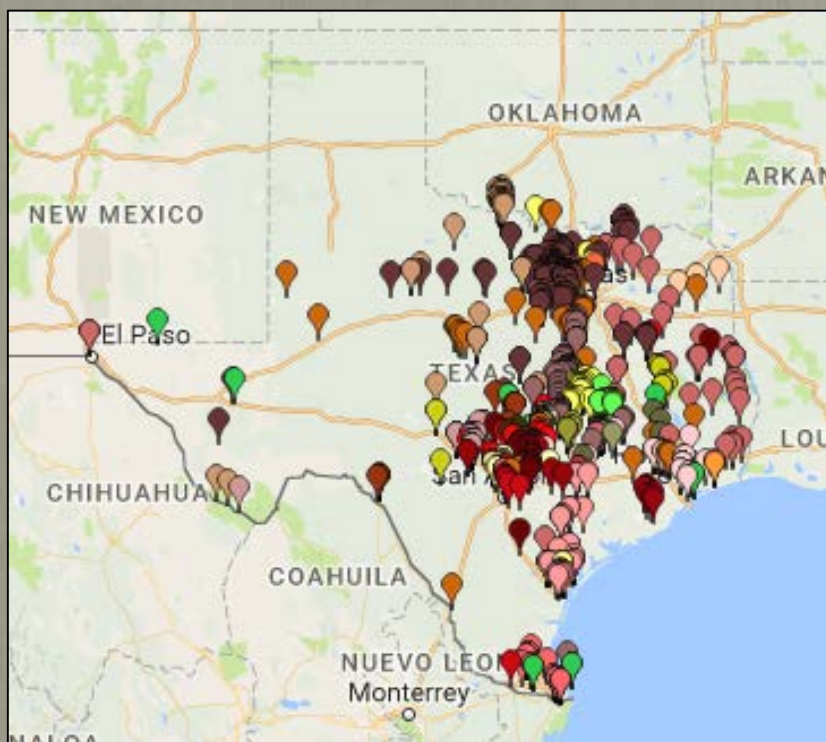
Links to species observation detail page, plant detail page and validation information.

The screenshot shows the 'INVASIVES DATABASE' website. On the left is a green sidebar with a menu: 'INVASIVES DATABASE', 'INVASIVE PLANTS', 'INVASIVE ANIMALS', 'INVASIVE INSECTS', 'INVASIVE PATHOGENS', 'INVADERS OBSERVATIONS', 'MAP INVASIVES' (highlighted with a green arrow), and 'COUNTY COMPARISONS'. Below the menu is a 'LOGIN & REPORT' section with 'Invaders of Texas Login', a 'username' and 'password' input field, a 'LOGIN' button, and a 'FORGOTTEN PASSWORD?' link. The main content area is titled 'MAP INVASIVES' and features a search bar with 'Map Satellites' selected and a dropdown showing 'Bothriochloa ischaemum var. songarica - 612'. A red button says 'BECOME A CITIZEN SCIENTIST'. Below the search bar is a map of Texas with a red pin indicating '612 Observations Found'. The map shows major cities like Lubbock, Abilene, Fort Worth, Dallas, Waco, Austin, San Antonio, Houston, and San Diego. The map interface includes a compass, a person icon, and zoom controls.

Search & Export Data by:
Species, Satellite or Observer

Invaders of Texas Data

Example: *Arundo donax* (giant reed)

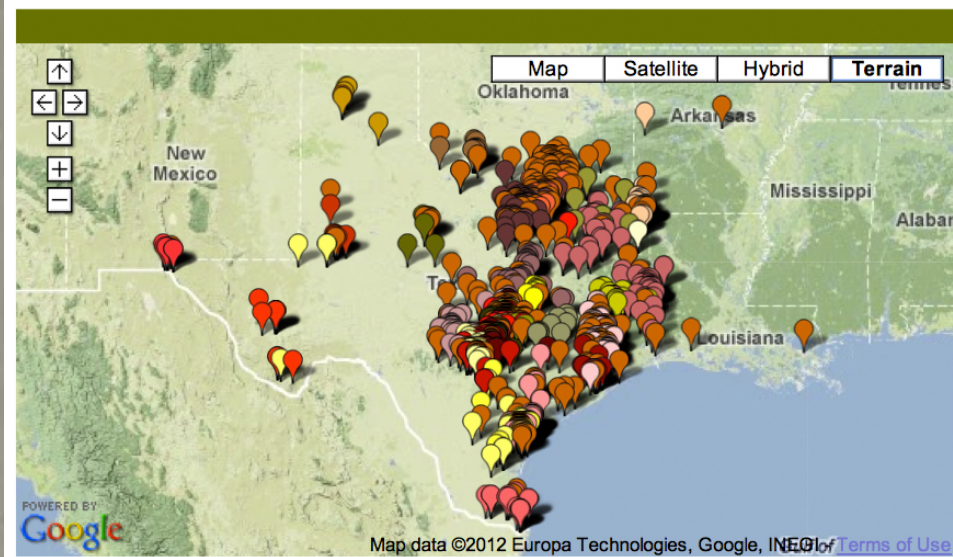


Invaders of Texas Data Summary

Invaders of Texas Program Summary 2005-2018

- 139 workshops
- 77 satellites
- 3,185 trained citizens
- 22,099 observations
 - 3523 = aquatic/riparian
- 9,000+ hours

DISTRIBUTION OF CITIZEN SCIENTISTS



Training includes "Clean-Drain-Dry", aspects of aquatic invasives

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Integrated components:

- ✓ Citizen science program
- **Early detection and rapid response (EDRR) system**
- Website
- Mobile app
- Facebook page
- Monthly e-newsletter
- Outreach

The “Dirty Dozen” Pest List

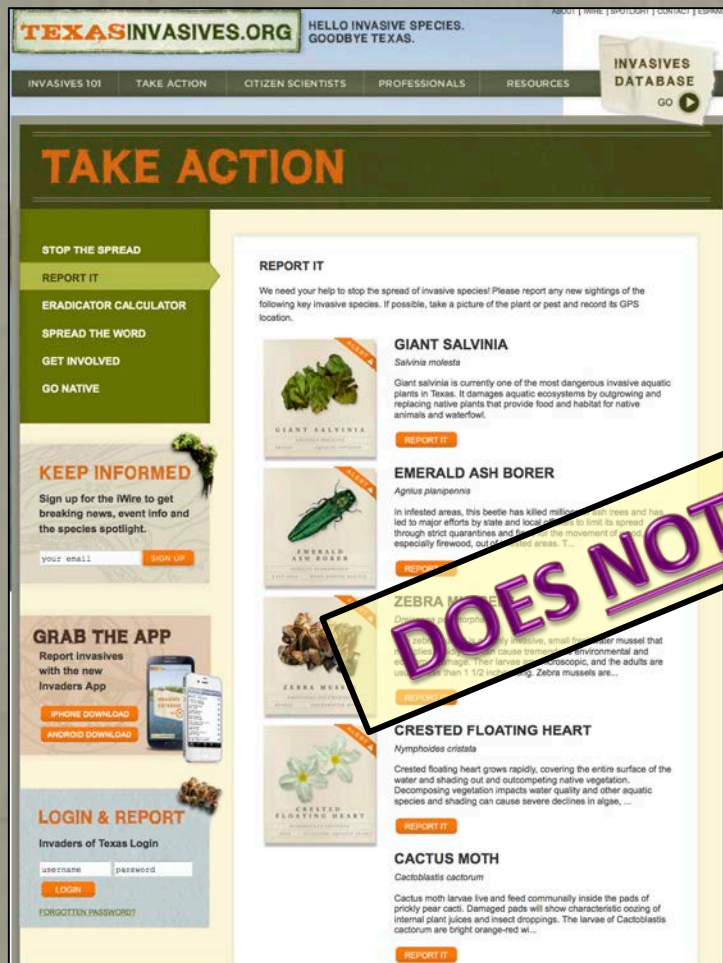


COMMON NAME	SCIENTIFIC NAME
Asian Longhorned Beetle	<i>Anoplophora glabripennis</i>
Brown Fir Longhorned Beetle	<i>Callidiellum villosulum</i>
Cactus Moth	<i>Cactoblastis cactorum</i>
Emerald Ash Borer	<i>Agrilus planipennis</i>
Gypsy Moth	<i>Lymantria dispar</i>
Sirex Woodwasp	<i>Sirex noctilio</i>
Cogongrass	<i>Imperata cylindrica</i>
Giant Hogweed	<i>Heracleum mantegazzianum</i>
Onionweed	<i>Asphodelus fistulosus</i>
Tropical Soda Apple	<i>Solanum viarum</i>
Tropical Spiderwort	<i>Commelina benghalensis</i>
Giant African Land Snail	<i>Lissachatina fulica</i>

Aquatic Species

COMMON NAME	SCIENTIFIC NAME
Crested Floating Heart	<i>Nymphoides cristata</i>
Giant Salvinia	<i>Salvinia molesta</i>
Yellow Floating Heart	<i>Nymphoides peltata</i>
Lionfish	<i>Dreissena polymorpha</i>
Zebra Mussel	<i>Pterois volitans</i>

Reporting a Species for the Sentinel Pest Network



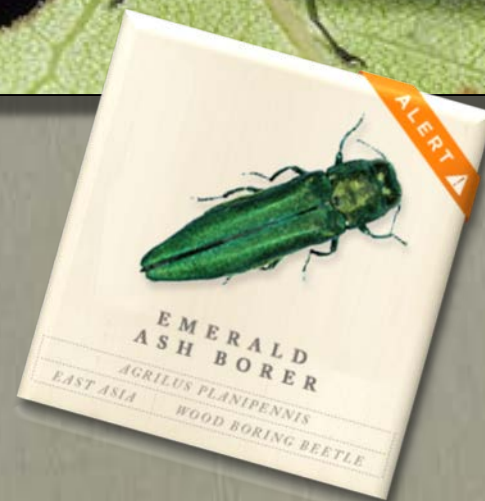
Sentinel Pest Network

Trains citizens to identify and report specific "high consequence" pests that threaten the natural biodiversity of the state.

Early Detection and Rapid Response System

2018

- ~ 50 pest reports submitted
- 21,057 website views
- 28 participants completed the EAB online training
- 66 completed the SPN online training
- 143 participants trained in workshops



Sentinel Pest Network

2018

- 21,057 website views
 - Most: Lionfish – 3,190
 - 2nd most: Emerald Ash Borer – 2,374



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HELLO INVASIVE SPECIES.
GOODBYE TEXAS.

Cooperative Weed Management Areas (CWMAs)

Cooperative Invasive Species Management Areas (CISMAs)

PARTNERS



Today

Introduction to CWMAs/CISMAs

**Update on Texas Gulf Region
Cooperative Weed Management
Area**

**Update on Planning of Two New
Cooperative Invasive Species
Management Areas**



Cooperative Weed Management Area (CWMA)

- **Long-term partnership** of federal, state, and local governments, NGO's, institutions, and individuals
- Focused on **invasive species management**
- **Defined geographic area**
- **Facilitate cooperation and coordination** across jurisdictional boundaries
- **Share and leverage limited resources**
- **Non-regulatory**



Benefits of a CWMA

Creating a formal agreement to work together can be more effective:

- Share workload
- Share existing resources
- Produce usable data and track distribution
- Raise future resources
- Create a community effort that lasts long after the initial project is completed.

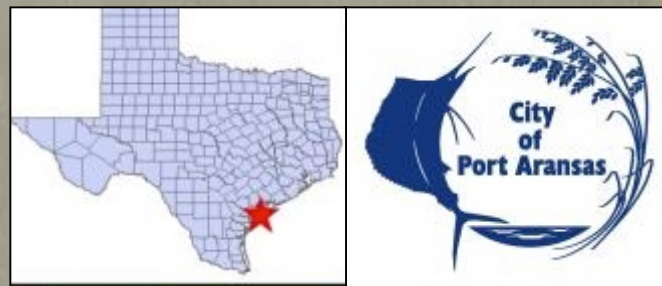


Texas Gulf Region CWMA



Photo: Kendal Keyes, Texas Parks and Wildlife Department
Texas Gulf Region CWMA texasinvasives.org

Texas Gulf Region Cooperative Weed Management Area



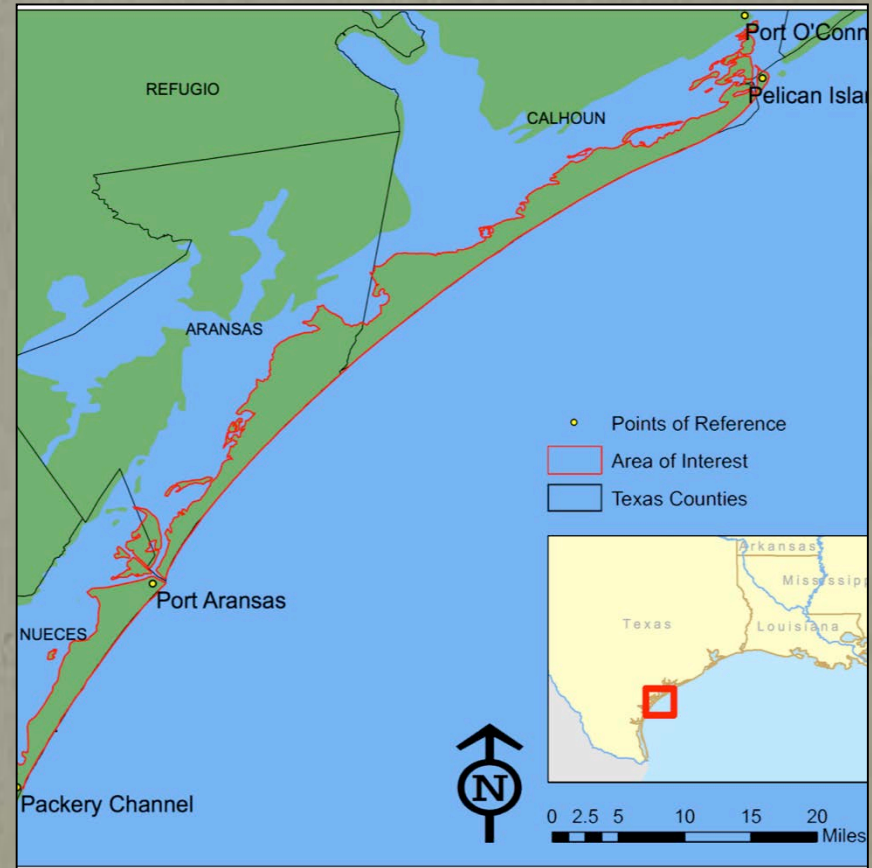
Texas Gulf Region Cooperative Weed Management Area

Mission

- To address the problem of the invasive Brazilian peppertree (*Schinus terebinthifolious*) from Port O'Connor to Packery Channel on the Texas Gulf Coast

Texas Gulf Region Cooperative Weed Management Area (TGR-CWMA)

- **Location**
 - Mustang, San José, and Matagorda Islands
- **Size**
 - Approximately 151.3 square miles (391.9 km²) or 96,832 acres (39186.5 ha)
- **Ownership**
 - Federal, State, County, City, Private
- **Habitats**
 - Coastal prairie and grasslands
 - Dune habitats
 - Developed/impacted lands



Texas Gulf Region Cooperative Weed Management Area (TGR-CWMA)

- **History**

- City of Port Aransas instigated 2009
- Partners brought together
- “Pulling Together” initiative (NFWF)
- Officially established in 2014

- **Member organizations**

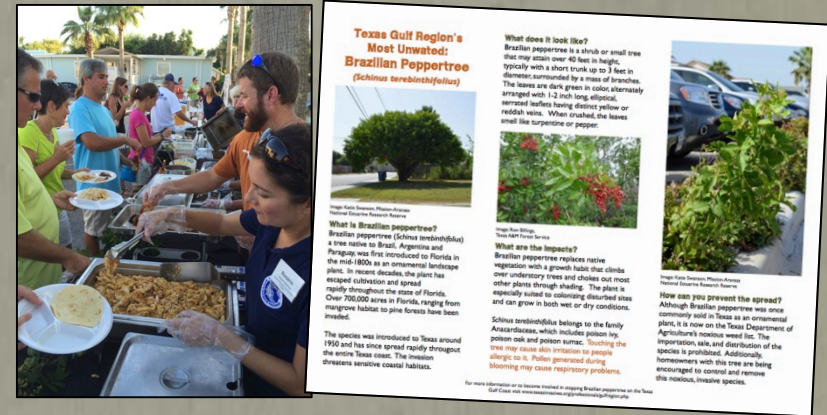
- City of Port Aransas
- Coastal Bend Bays & Estuaries Program (CBBEP)
- Lady Bird Johnson Wildflower Center (LBJWC)
- Mission-Aransas National Estuarine Research Reserve (MANERR)
- Nueces County Coastal Parks Department
- University of Texas Marine Science Institute (UTMSI)
- U.S. Fish and Wildlife Service (USFWS)
- Texas A&M Forest Service
- Texas Parks and Wildlife Department (TPWD)

Texas Gulf Region Cooperative Weed Management Area (TGR-CWMA)

• Activities

- Mapping
- Work Days
- Coordination
- Outreach
- Administration (grants, etc.)
- Meetings

OUTREACH



ERADICATION AND RESTORATION

BEFORE



AFTER



Accomplishments 2014-2018

- **5-YEAR MANAGEMENT PLAN**
- **OUTREACH**
 - 200+ person-hours
 - Brochures, door hangers, lawn signs, newspaper articles, YouTube video
 - Community events
- **COMMUNITY WORKDAYS**
 - 780+ man hours
- **NUMBER OF ACRES UNDER IMPROVED MANAGEMENT**
 - 5,775 acres
- **NUMBER OF ACRES RESTORED**
 - 130+

Removal work

a lot of **removal** of invasive plants and **restoration** of coastal prairie around Port Aransas has occurred.



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Two Incipient Texas CISMAs



Update on Two Incipient CISMAs

Northeast Texas

Northeast Texas Conservation Delivery Network, Cypress
Basin Working Group

Houston Area

HARC (Houston Advanced Research Center)

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Thank you!

Hans Landel, Ph.D.

Invasive Species Program Coordinator

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PARTNERS



TEXAS A&M
FOREST SERVICE



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Integrated components:

- ✓ Citizen science program
- ✓ Early detection and rapid response (EDRR) system
- **Website**
- Mobile app
- Facebook page
- Monthly e-newsletter
- Outreach

Texasinvasives.org website

Portal to invasive
species information for
Texas

An important
component is the
Invasives Database



Texasinvasives.org website

Invasives Database

- Illustrated Descriptions
- Ecological Information
- Distribution & Habitat
- Biology & Spread
- History of Introduction
- Ecological Threats
- Control & Management
- Native Look-a-likes
- References



Texasinvasives.org website

Invasives Database

Plants: 175

- 35 - 66 aquatic/riparian

Non-insect Animals: 20

- 15 aquatic

Insects: 46

Pathogens: 4

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[INVASIVES 101](#)
[TAKE ACTION](#)
[CITIZEN SCIENTISTS](#)
[PROFESSIONALS](#)
[RESOURCES](#)

INVASIVES DATABASE
GO

INVASIVES DATABASE

INVASIVES DATABASE
INVASIVE PLANTS
INVASIVE ANIMALS
INVASIVE INSECTS
INVASIVE PATHOGENS
INVADERS OBSERVATIONS
MAP INVASIVES
COUNTY COMPARISONS

AGRILUS PLANIPENNIS

EMERALD ASH BORER

Synonym(s):
Class: Insecta
Order: Coleoptera
Family: Buprestidae

[Go Back](#) | [Printer Friendly Fact Sheet](#)



Photographer: David Cappaert
Source: Michigan State University

DESCRIPTION

Adult Description: The Emerald Ash Borer (*Agrilus planipennis*) are uniformly bright metallic emerald green, with the elytra usually appearing somewhat duller and slightly darker green. The overall greenish coloration may also have variable amounts of brassy, coppery or reddish reflections. A few rare specimens of Emerald Ash Borer are entirely coppery-red, blue-green, or green with blue elytra. Length: 10.0-13.0 mm. Emerald Ash Borer is somewhat larger in size and more brightly metallic green than most other U.S. *Agrilus* species.

The dorsal surface of the abdomen is bright coppery-red. This may only be visible if the elytra and wings are raised. This is the only *Agrilus* species found in North America in which the dorsal surface of the abdomen bright metallic red. This may be the simplest diagnostic character for separating Eastern Ash Borer from all other *Agrilus* species in North America. The dorsum of the abdomen is normally black, green or blue on all other North American species of *Agrilus*.

KEEP INFORMED

Sign up for the iWire to get breaking news, events and the species spotlight.

your email [SIGN UP](#)

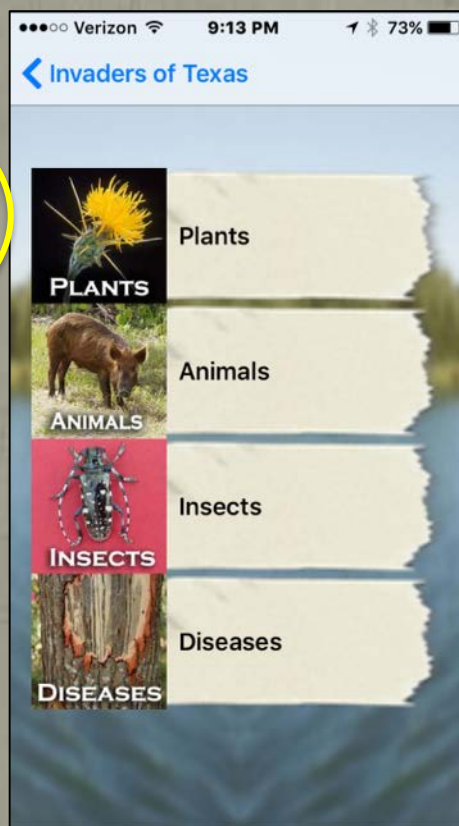
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Integrated components:

- ✓ Citizen science program
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- ✓ Website
- **Mobile app**
- Facebook page
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Texas Invaders mobile app

Home Screen



Species description



Texasinvasives.org

Integrated components:

- ✓ Citizen science program
- ✓ Early detection and rapid response (EDRR) system
- ✓ Website
- ✓ Mobile app
- **Facebook page – 197 followers**
- **Monthly e-newsletter – "iWire": 1,939 subscribers**
- Outreach

Texasinvasives.org

Integrated components:

- ✓ Citizen science program
- ✓ Early detection and rapid response (EDRR) system
- ✓ Website
- ✓ Mobile app
- ✓ Facebook page – 197 followers
- ✓ Monthly e-newsletter – "iWire": 1,939 subscribers
- **Outreach**
 - 18 presentations (2018)
 - High school curriculum (2017)