TexRAT - Galveston

The Hunt for Invasive Species

Leslie Hartman

TEXAS PARKS & WILDLIFE

TexRAT
the Texas Rapid Assessment Team

- Week long Rapid Assessment Survey of aquatic species in Galveston Bay and tributaries
  - June 19-24, 2011
- A snapshot in time providing short term distribution and abundance patterns
  - Native
  - Non-native
- Establish cross agency relationships
- Increase public awareness

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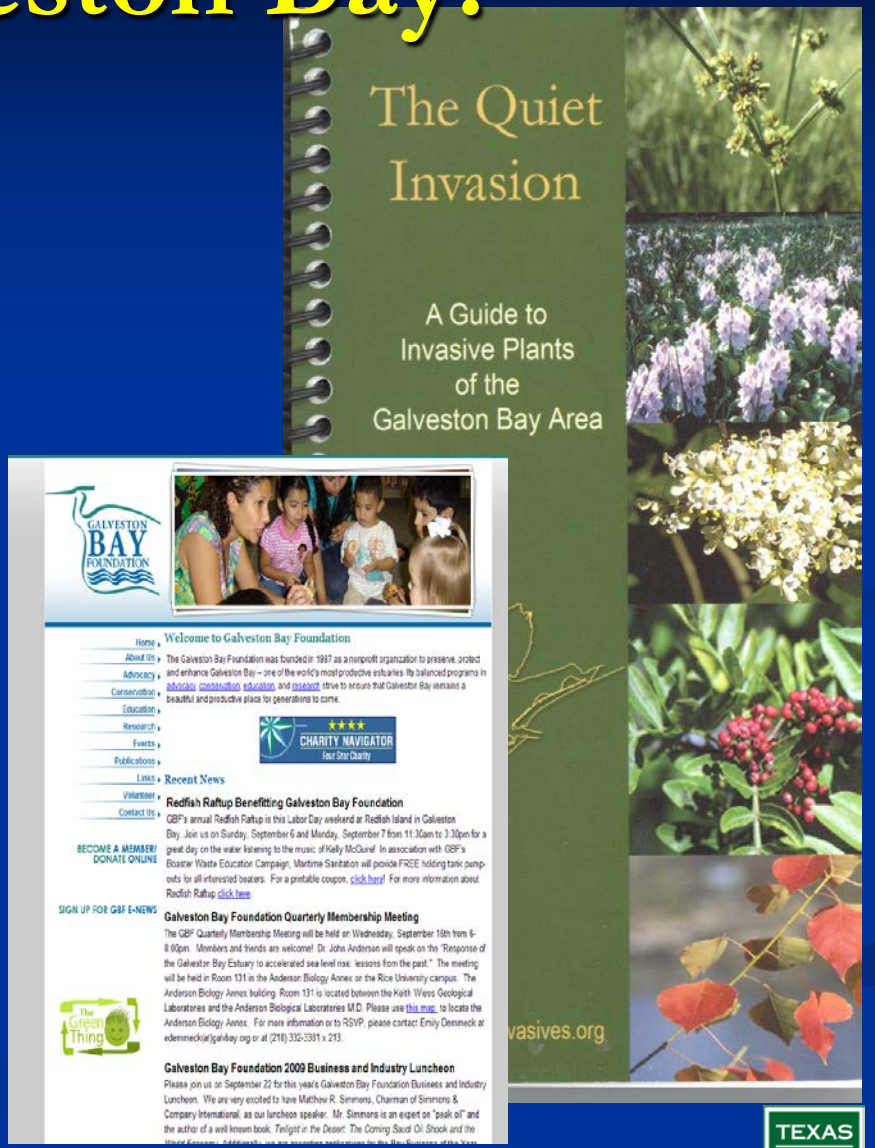
Why Galveston Bay?

- Research rich area
- Vested organizations
- History of exotic species
- Multiple pathways provide an open door to new invasives
- Geographically accessible



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TexRAT Funding

- TPWD Funds
  - $20,000 restitution funds
  - $20,000 SWG funds
- Partners
  - Texas Parks and Wildlife
  - Texas A&M Galveston
  - Univ. of Houston Clear Lake
  - Houston Advanced Research Center
  - Sea Grant
- In-Kind Donations
  - Personnel

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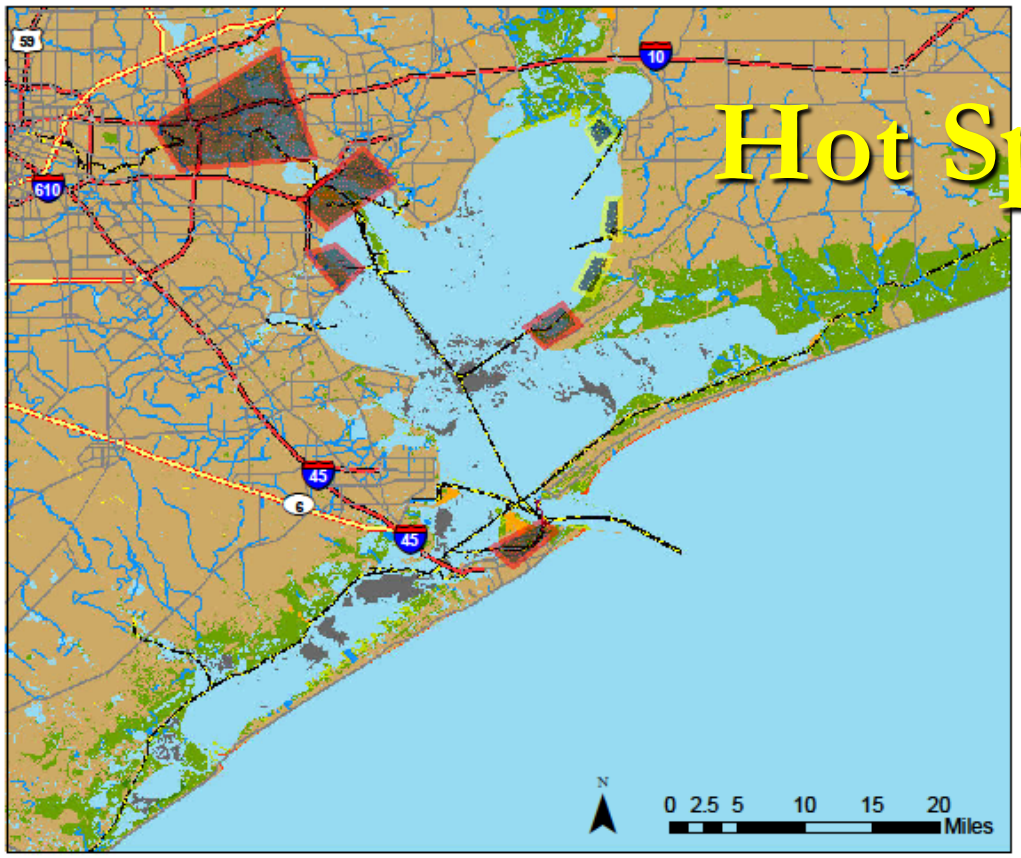
Hot Spotting



Legend

AreasMarch

Exotic Risk

- high
- medium
- oysters

hydroglop

DESCRIPTIO

- Bay/Gulf of Mexico
- Beach
- Ditch,Canal
- Fish Hatchery
- Flooded Quarry/Pit
- Impounded Area
- Intermittent Lake
- Inundation Area
- Lake,Reservoir
- Land
- Mangrove Area
- Mud/Tidal Flat
- Oyster Reef
- River,Stream
- Sand Dune
- Seagrass
- Sewage/Filtration Po
- Wetland

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Participants

- Texas Parks and Wildlife Department
  - Coastal Fisheries
  - Inland Fisheries
  - Wildlife
- US Fish and Wildlife Service
- US Geologic Survey
- US Coast Guard
- Texas Commission on Environmental Quality
- Texas Master Naturalist
- Port of Houston
- Texas A&M University
  - Galveston Campus
  - College Station
- University of Houston – Clear Lake
- Gulf Coast Research Lab
- Houston Advanced Research Center
- Sea Grant
- Galveston Bay Foundation
- Blinn College
- The Nature Conservancy

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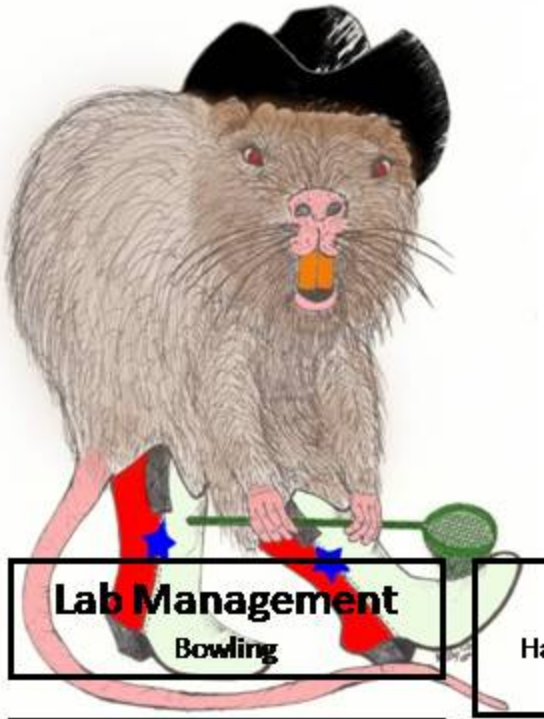

TexRAT - Galveston

Program Management
Hartman, Quigg, Guillen & Gonzalez

Lab Management
Bowling

Outreach
Hartman, Quigg, Guillen & Gonzalez

Field Manager
Balboa

Weather Manager
TMN, Bowling

Data Shepherding
Bowling

Media Team
Harvey, Cashio, Barbier & Gonzalez

SOPs
TexRAT Team

Data Entry
On-site (TMN?)

Photographers
Hartman, Quigg, Guillen & Gonzalez

Safety Manager
Grimmett

Data Storage
GSMFC & HARC

Data Management

- One-way In, One-way Out
- Web-based
  - HARC
  - GSMFC
- UHCL and A&M Texas Museum Accessioning

Media Coverage

chron.com

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Tompkins: Cataloging alien and invasive species

Unwanted guests

In an effort to catalog alien and invasive species whose presence may be caus damage, scientists working primarily in the Galveston Bay area are conducting collecting samples

SHANNON TOMPKINS

Published 05:30 a.m., Thursday, June 23, 2011

VIEW: LARGER | HIDE

GALVESTON COUNTY

THE DAILY NEWS

Monday, September 19 | Texas' Oldest Newspaper: Since 1842

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Allison Parnell, left, and Rachel Windham try to identify a plant collected from the Galveston Bay area Tuesday. The two are part of the Texas Rapid Assessment Team that spent the week tracking invasive species.

[illegible] by Jennifer Reynolds - See More Photos

[illegible]oup tracks invasive species on island

[illegible]atie Terhune
[illegible]espondent

[illegible]shed June 24, 2011

[illegible]ms of scientists, students and nature-lovers spread out across the Galveston [illegible]area to catalogue the ecosystems' plants, fish and small mammals in an [illegible]mpt to identify and track invasive species.

The Texas Rapid Assessment Team gathered at Texas A&M University at

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Grass carp keep hydrilla in check, but can kill vegetation

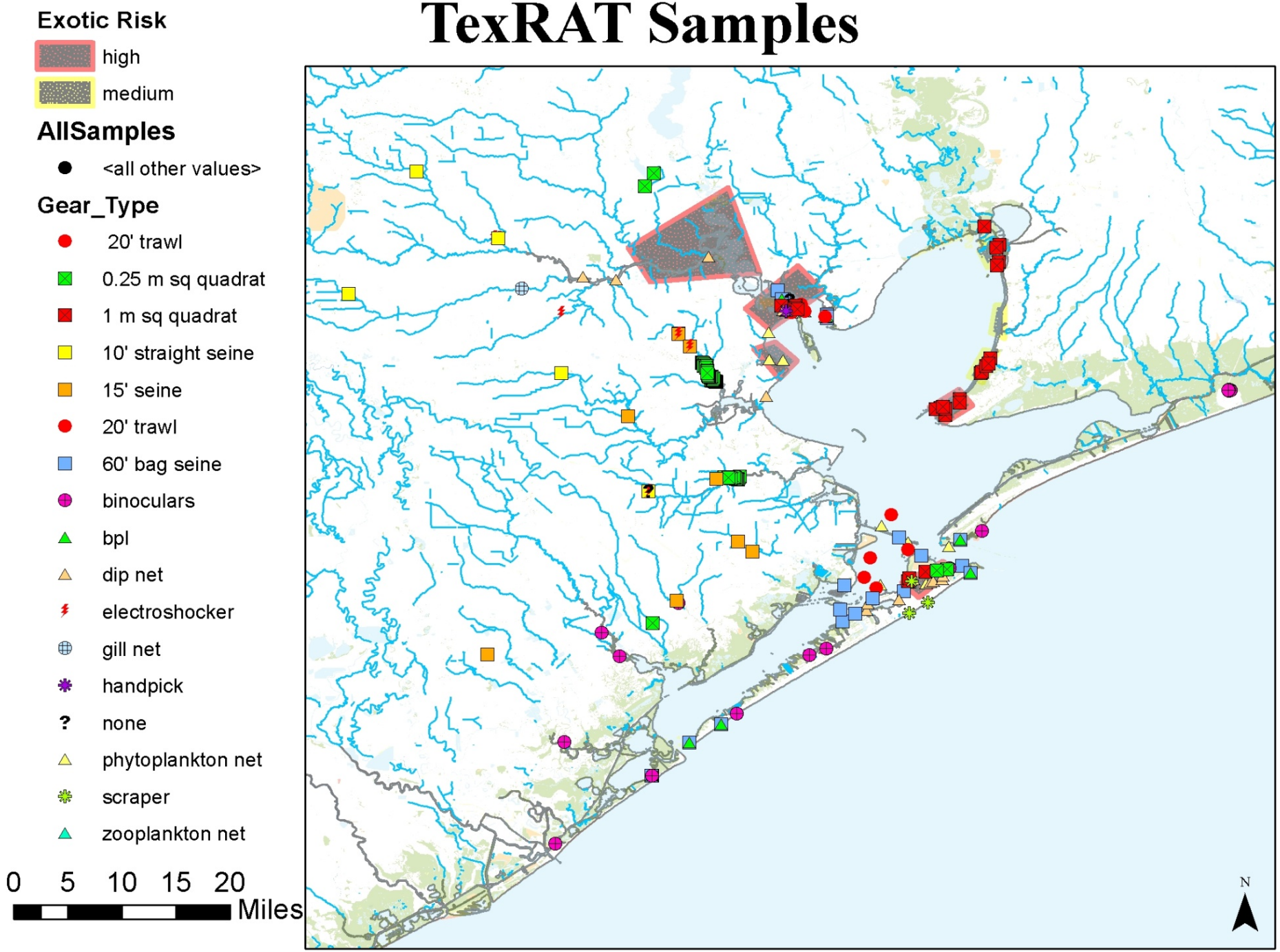
Population control

Grass carp keep hydrilla in check, but too many can destroy native vegetation

SHANNON TOMPKINS

Published 05:30 a.m., Thursday, July 14, 2011

TexRAT Samples



Animal Sampling

- Trawls
- Seines
- BPL
- Scrapings
- Electroshock
- Dip nets
- Bird surveys
- Mammal Trapping
- Gillnet

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Cichlids

Exotic Fauna

Gear_Type, Cichlid

- 15' seine, 0
- 15' seine, 1
- electroshocker, 0

Gear_Type, Tilapia

- 10' straight seine, 0
- 10' straight seine, 1

Exotic Risk

- high
- medium

Brenda Bowling

Range Extension

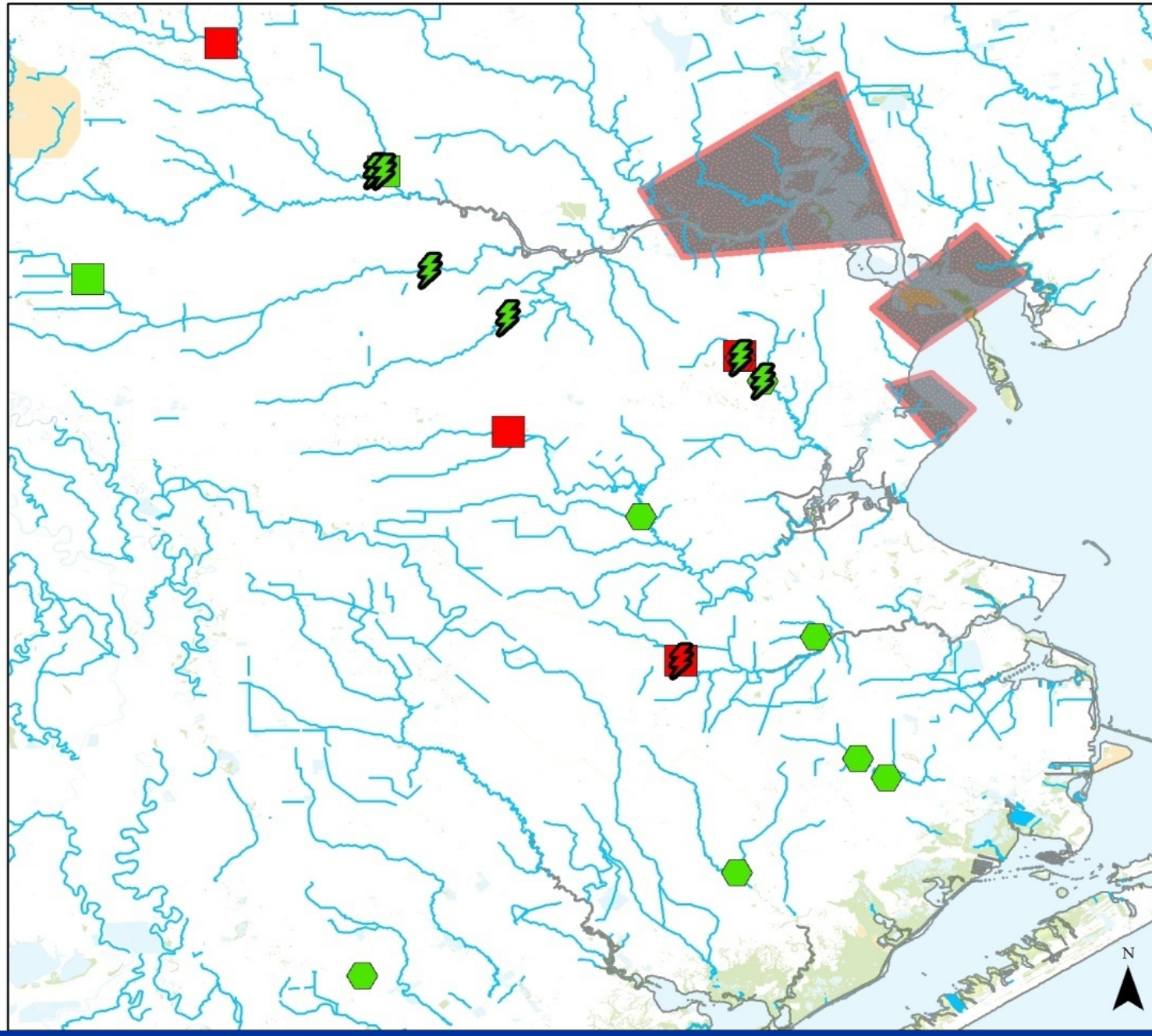
Native To: Africa and Middle East

0 2.5 5 7.5 10

Miles

N

Corbicula fluminea



Native To: Southern and eastern Asia and Africa

Ctenopharyngodon idella

Gear_Type, grass carp

- 10' straight seine, 0
- 15' seine, 0
- electroshocker, 0
- electroshocker, 1

Exotic Risk

- high
- medium

Brenda Bowling

Native To: Eastern Asia

0 2.5 5 7.5 10
Miles

N

Pterygoplichthys anisitsi

Gear_Type, Pleco

- 10' straight seine, 0
- 10' straight seine, 1
- 15' seine, 0
- electroshocker, 0
- electroshocker, 1

Exotic Risk

- high
- medium

Brenda Bowling

Native To: Eastern Asia

0 2.5 5 7.5 10
Miles

N

Pomacea insularum

Gear_Type, apple snail

- 10' straight seine, 0
- 10' straight seine, 1
- 15' seine, 0
- electroshocker, 0
- electroshocker, 1

Exotic Risk

- high
- medium

Native To: South America

0 2.5 5 7.5 10
Miles

N

Plant Sampling

- Random quadrant surveys
- Phytoplankton net
- Sightings

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Alternanthera philoxeroides

Exotic Risk

high

medium

Alternanthera philoxeroides

0

1

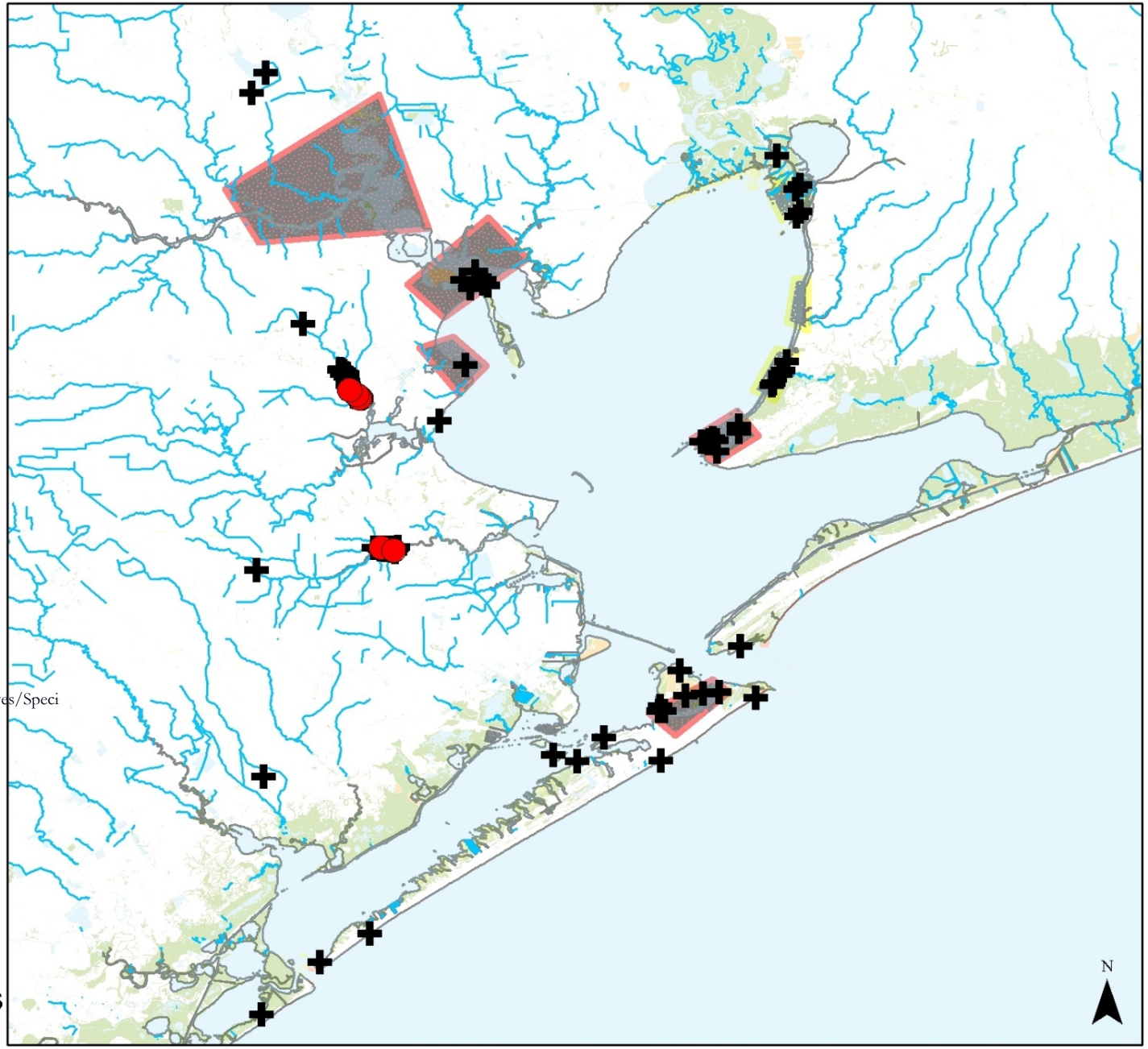
Nicki Starks

Native To: South America

0 5 10 15 Miles

N

Arundo donax



http://images.harc.edu/Sites/GalvBayInvasives/Species/ArundoDonax.jpg.thumb.jpg

Native To: eastern Asia

Colocasia esculenta

Exotic Risk

high

medium

Colocasia esculenta

0

1

http://images.harc.edu/Sites/GalvBayInvasives/Species/Photos/COES_EIHUHCL.jpg

Native To: South Asia & India

0 5 10 15 Miles

N

Eichhornia crassipes

Exotic Risk

high

medium

Eichhornia crassipes

0

1

http://www.galvbayinvasives.org/Guide/List?list=TPWDPES

Native To: South America

0 5 10 15 Miles

N

Hydrilla verticillata

Exotic Risk

high

medium

Hydrilla verticillata

0

1

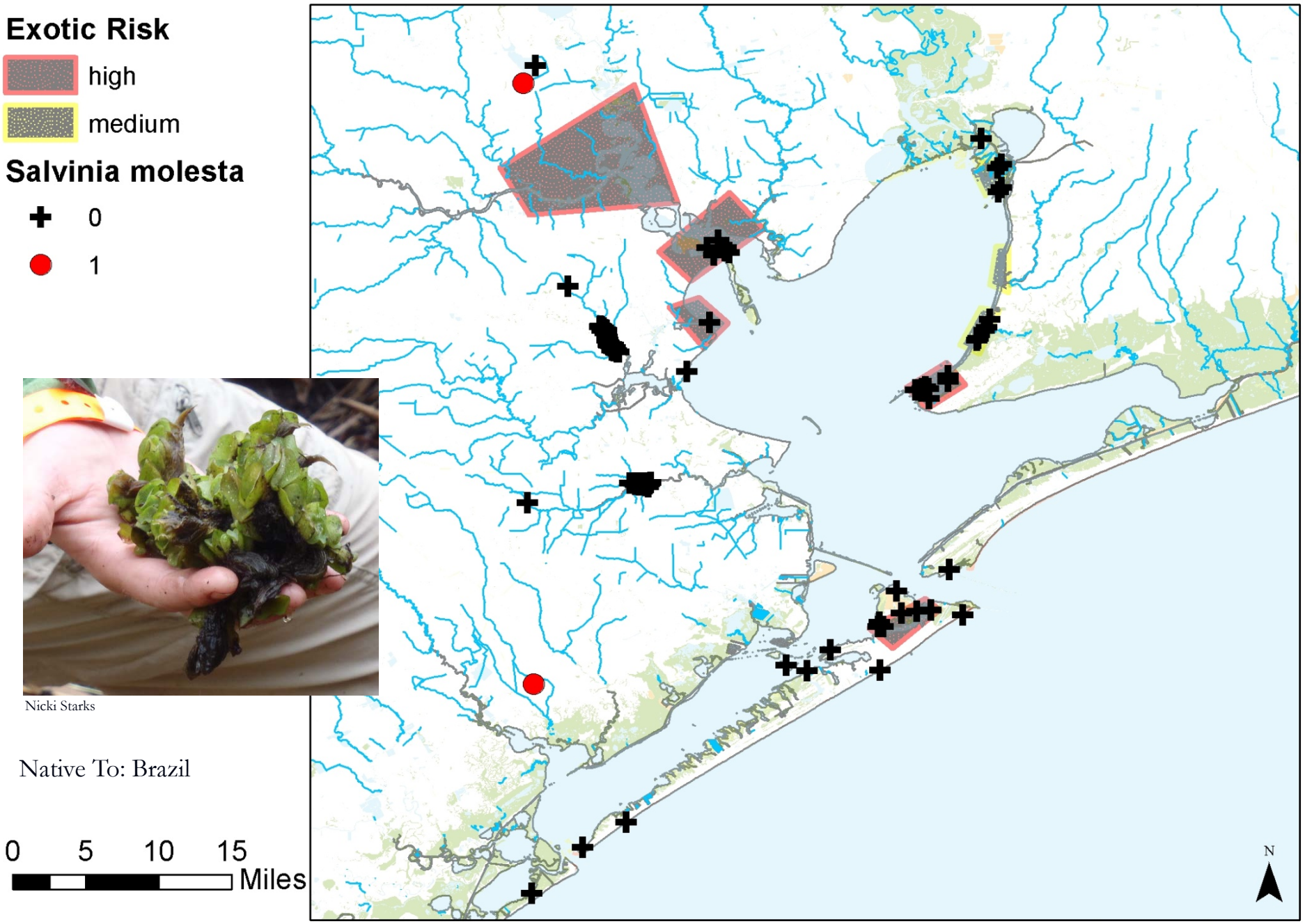
http://images.harc.edu/Sites/GalvBayInvasives/Species/HydrillaVerticillata.jpg.thumb.jpg

Native To: Africa

0 5 10 15 Miles

N

Salvinia molesta



Nicki Starks

Native To: Brazil

Schinus terebinthifolius

Exotic Risk

high

medium

Schinus terebinthifolius

0

1

Nicki Starks

Native To: South America

0 5 10 15

Miles

N

Tamarix spp.

Tamarix gallica

1

Tamarix chinensis

1

Tamarix ramosissima

0

1

Exotic Risk

high

medium

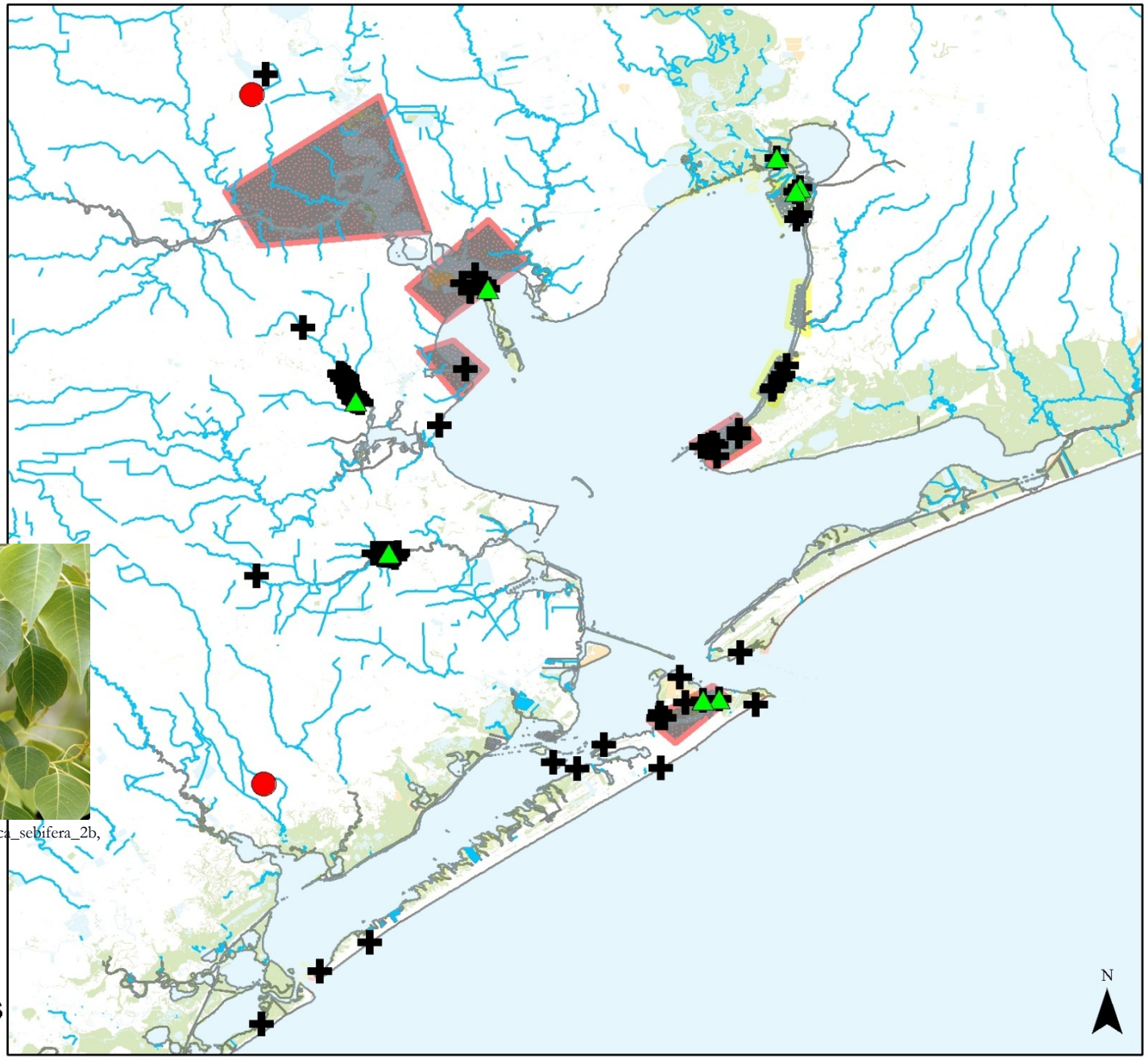
http://www.ksda.gov/includes/images/plant_protection/Noxious%20Weeds/SaltCedarBloom319.jpg

Native To: Sicily & Morocco
southwestern Asia
Eurasia

0 5 10 15 Miles

N

Triadica spp.



http://www.floridanature.org/photos/Triadica_sebifera_2b,_Tallahassee,_20040509.jpg

Native To: China

Results

Texas - Galveston:

- **18* agencies, 53 personnel**
- **~ 250 samples collected**
- **~ 350 species identified**
- **10 invasive animal species**
- **16 invasive plant species**
- **3 newspapers**

Louisiana:

- 15 agencies, 50 personnel
- ~ 250 samples collected
- ~ 400 species identified
- 6 invasive animal species
- 22 invasive plant species
- 3+ newspapers, 1 TV station, 2 webpages

Mississippi:

- 28 agencies, 115 personnel
- ~ 500 samples collected
- Over 400 species identified
- 2 invasive animal species
- 17 invasive plant species

Alabama:

- 14 agencies, 60 personnel
- ~ 200 samples collected
- Over 300 species identified
- 2 invasive animal species
- 14 invasive plant species
- 4+ newspapers, 5 TV stations, 1 radio station

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TexRAT Issues

- Weather
  - Windy
  - Rain (?!?)
- Personnel Scheduling
  - Timing
  - Commitment
- Need 2 complete teams: field and lab
- Centralized location
- Improve public outreach

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TexRAT - Galveston
USM/GCRL

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