

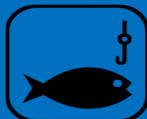
USGS Nonindigenous Aquatic Species (NAS) Fall Update: New Species Occurrences in the Gulf States

Cayla Morningstar

USGS, Wetland and Aquatic Research Center

GSARP Nov 2024

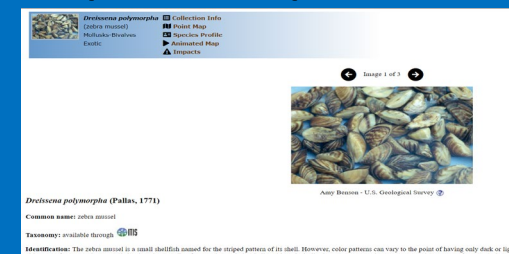
USGS Nonindigenous Aquatic Species (NAS)



Data from:
museum collections
researchers
state and federal agencies
other databases
scientific literature
public sightings reports
eDNA

Species impacts
Occurrence maps
Sighting reports

Species profiles



Data windows:



Great Lakes Aquatic Nonindigenous Species
Information System (GLANSIS)
Lake Champlain



Get new species alerts
for your area



Novel Species Occurrences Since Spring 2024

16 new

AL: 1

FL: 1

GA: 7

LA: 1

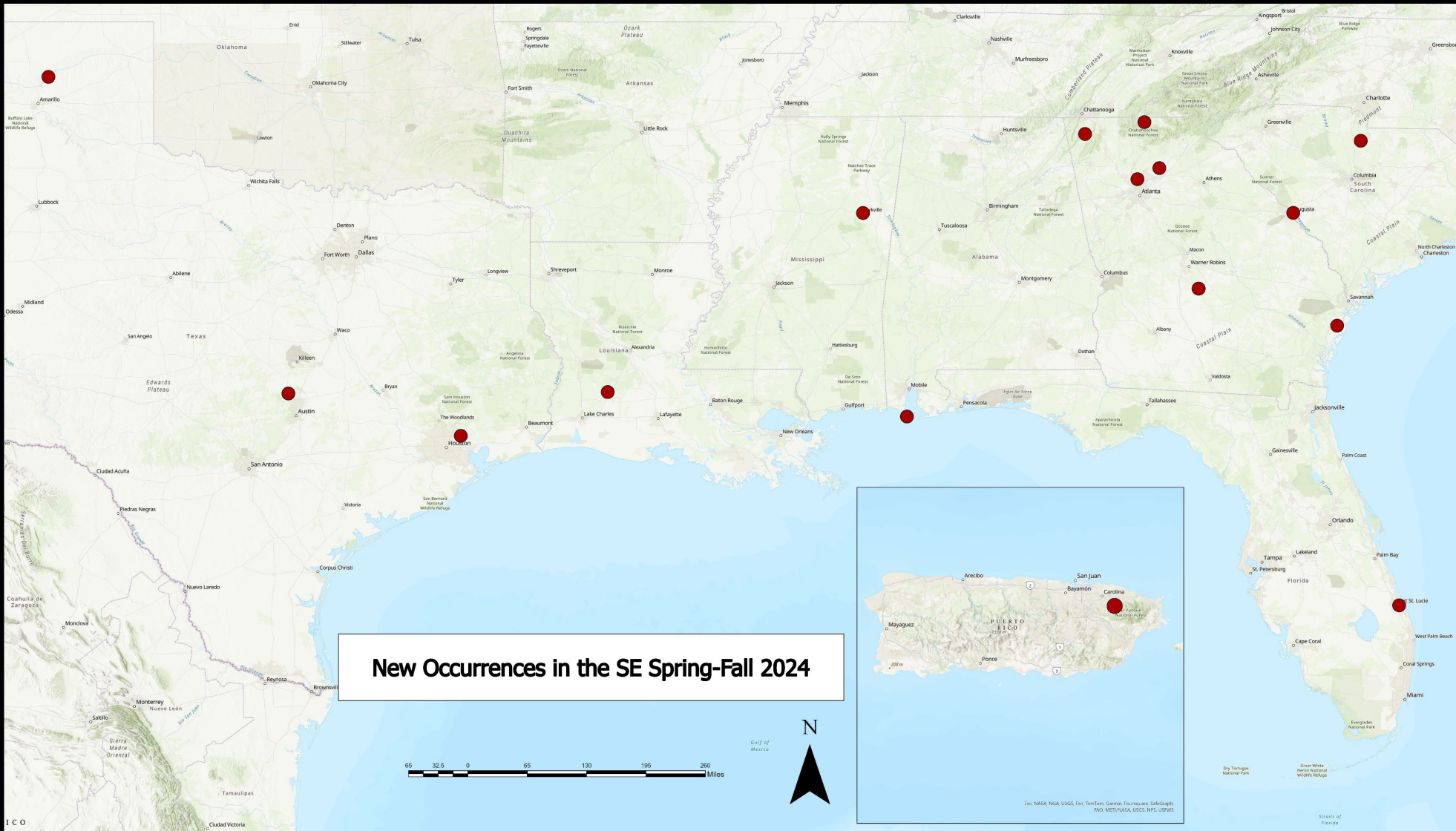
MS: 1

PR: 1

SC: 1





Texas: 3

. Not for Citation or Distribution.



Novel Species Occurrences Since Spring 2024

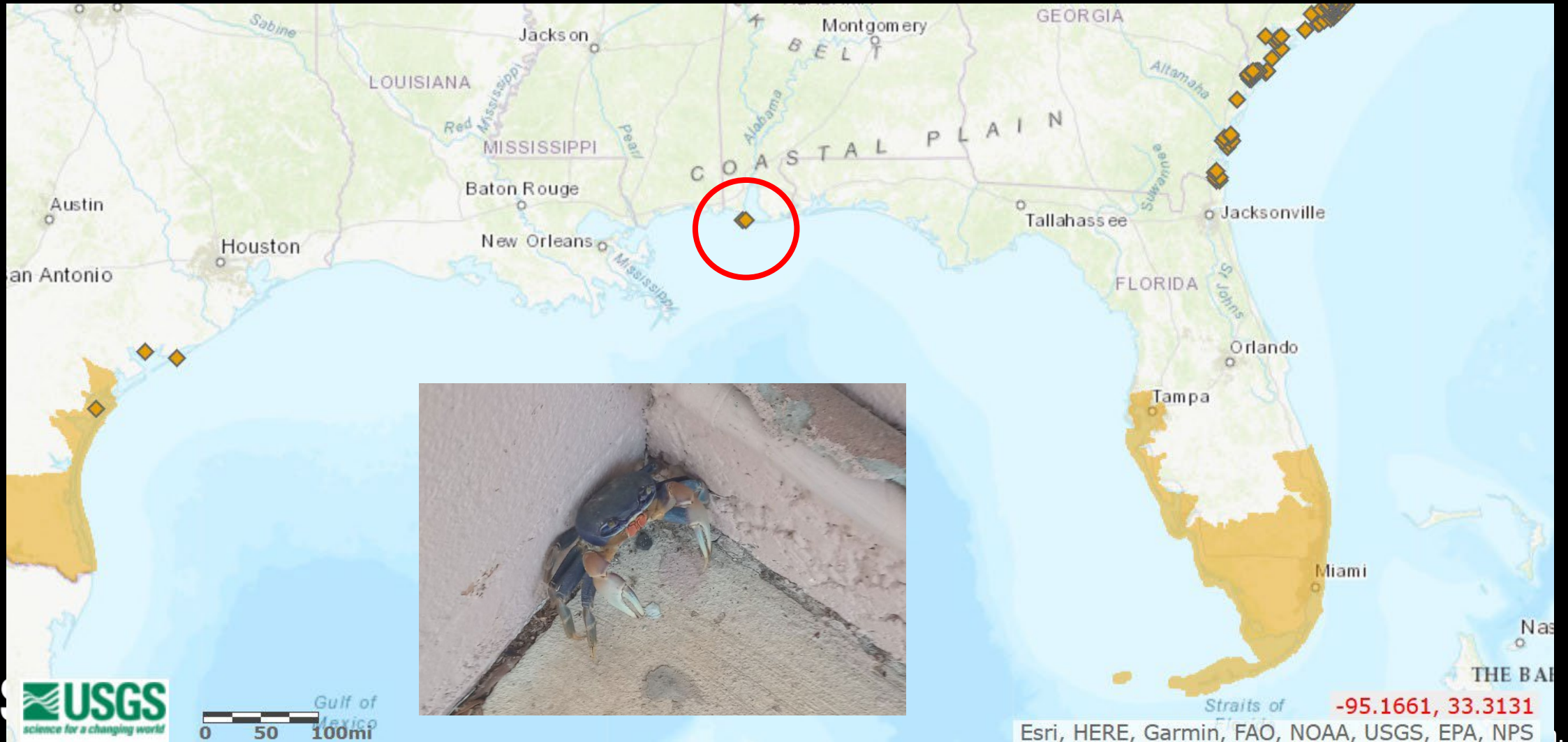
Scientific Name	Common Name	State
Cardisoma guanhumi	blue land crab	AL
Azolla pinnata	mosquito fern	FL
Astronotus ocellatus	Oscar	GA
Cardisoma guanhumi	blue land crab	GA
Cardisoma guanhumi	blue land crab	GA
Egeria densa	Brazilian waterweed	GA
Eichhornia crassipes	common water-hyacinth	GA
Myriophyllum spicatum	Eurasian watermilfoil	GA
Oreochromis niloticus	Nile Tilapia	GA
Pomacea maculata	giant applesnail	LA
Butomus umbellatus	flowering rush	MS
Vieja zonata		PR
Faxonius virilis	Virile Crayfish	SC
Aulonocara	hybrid peacock cichlid	TX
Monopterus cuchia	cuchia	TX
Piaractus brachypomus	pirapitinga, red-bellied pacu	TX

 New county, not far north of other records
 Failed, removed while fishing
 Failed. Found inland, removed
 New county/drn, connecting other records

 Preliminary Informatic Failed, removed while fishing Distribution.

Blue land crab (*Cardisoma guanhumi*)

New for state of Alabama; status unknown. 2 animals. Sightings years prior. Reported by the Dauphin Island Sea Lab.



Brazilian waterweed

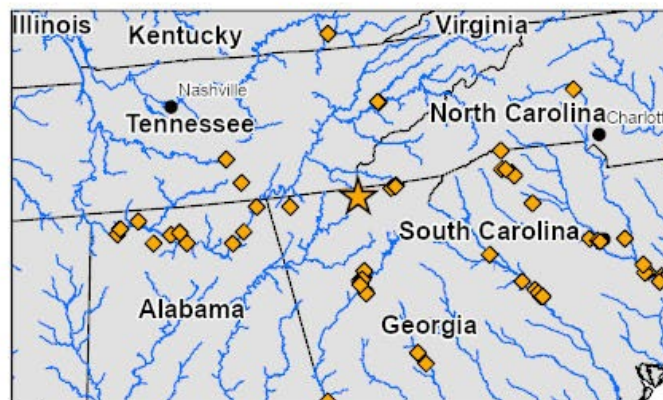
Egeria densa

Georgia

New County/Drainage

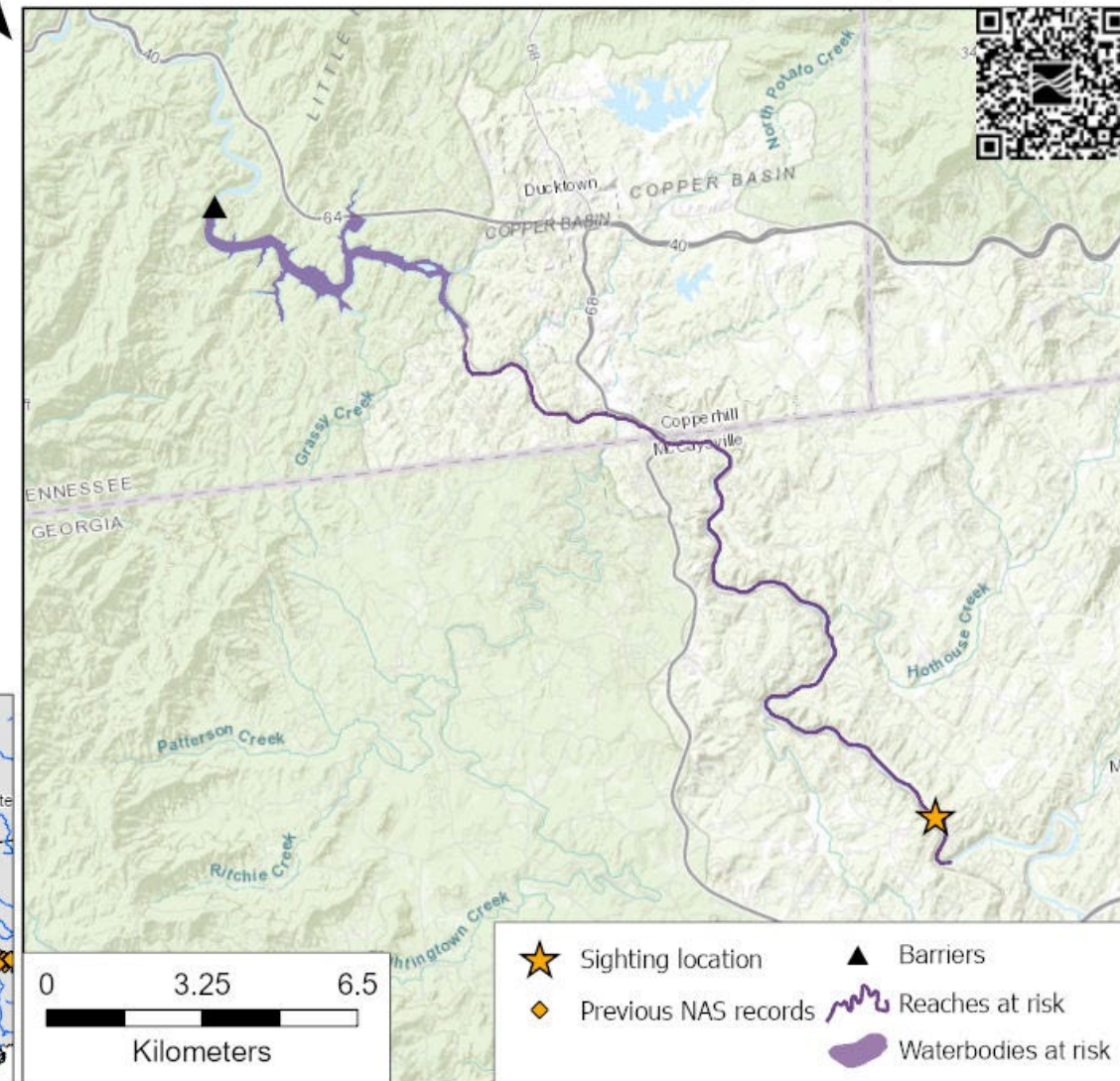


Specimen ID: 1736964
Species: *Egeria densa*
Common name: Brazilian waterweed
Alert Level: County: Fannin (GA);
Drainage: Ocoee (06020003)
Alert Date: 2024-08-13
State/Province: Georgia
Locality: Toccoa River near Gibbs Dr.
Latitude (N): 34.9114
Longitude (W): -84.3186
Collection Date: 2024-08-12
Comment:



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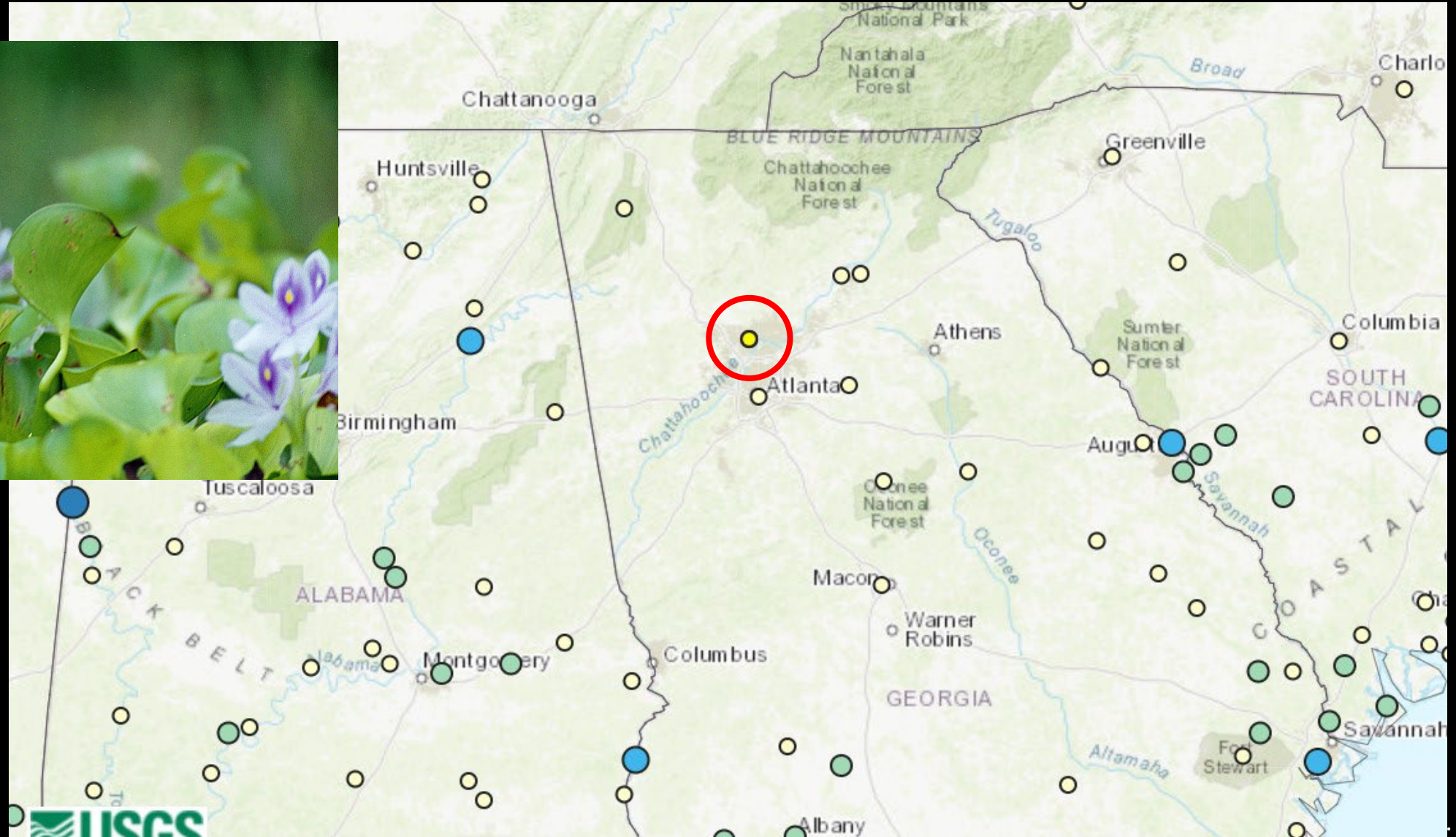
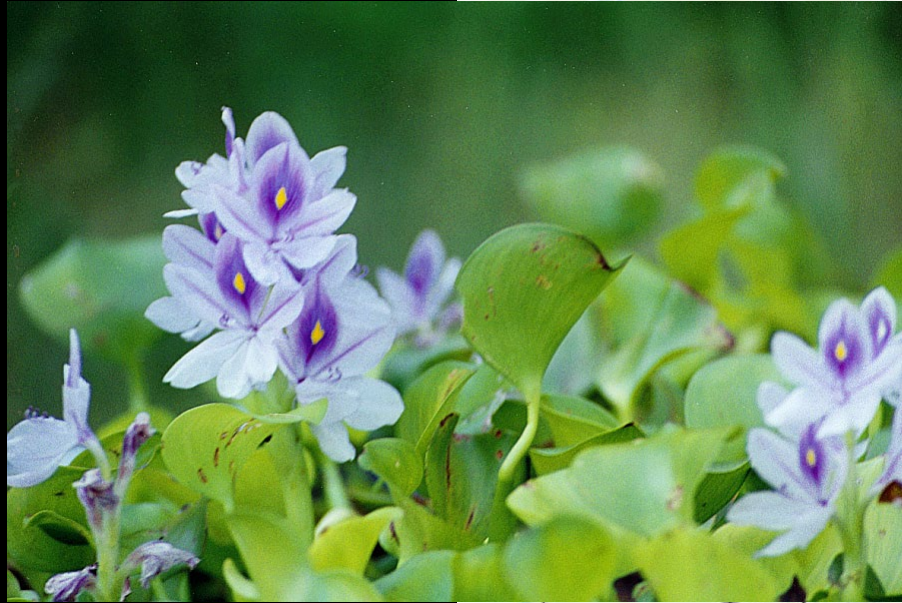
NAS Alert Risk Mapper (ARM)



The map shows waterbodies at short-term risk of invasion from the species sighting. The at-risk areas are determined by species mobility and drainage barriers (dams).



Common water-hyacinth (*Eichhornia crassipes*)
New County in Georgia. NAS sighting report. Established.



Eurasian watermilfoil (*Myriophyllum spicatum*)

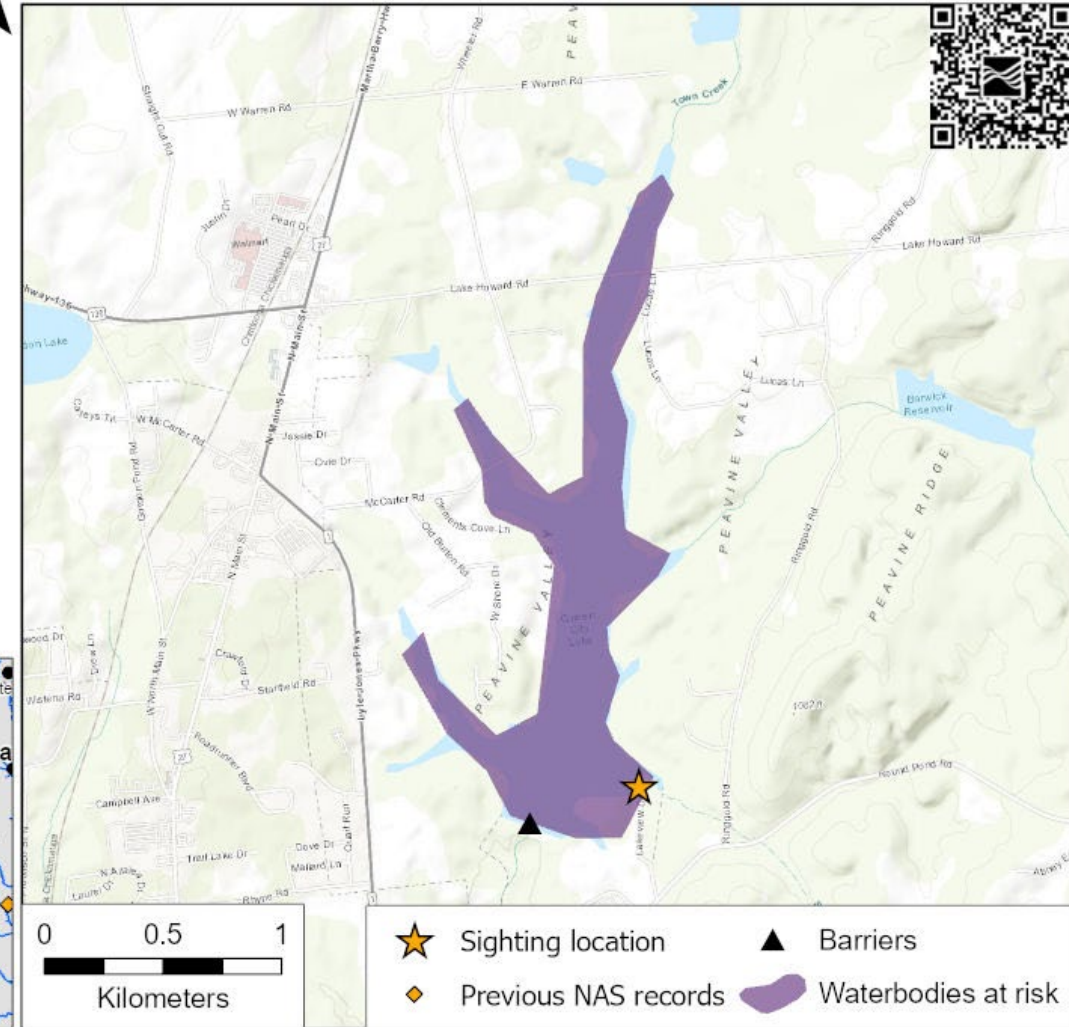
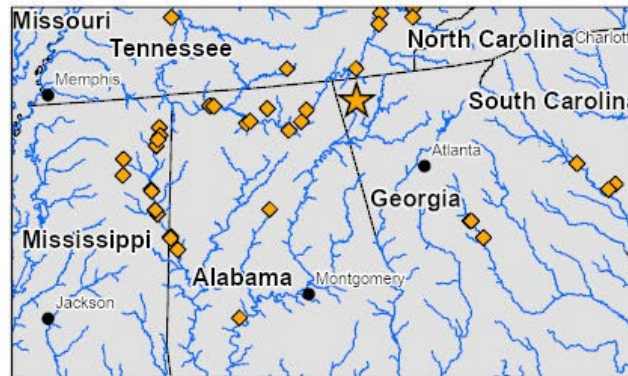
New County/Drainage for Georgia

GA DNR report



NAS Alert Risk Mapper (ARM)

Specimen ID: 1736854
Species: *Myriophyllum spicatum*
Common name: Eurasian watermilfoil
Alert Level: County: Walker (GA);
Drainage: Upper Coosa (03150105)
Alert Date: 2024-07-25
State/Province: Georgia
Locality: Queen City Lake
Latitude (N): 34.7244
Longitude (W): -85.2581
Collection Date: 2024-06-24
Comment:



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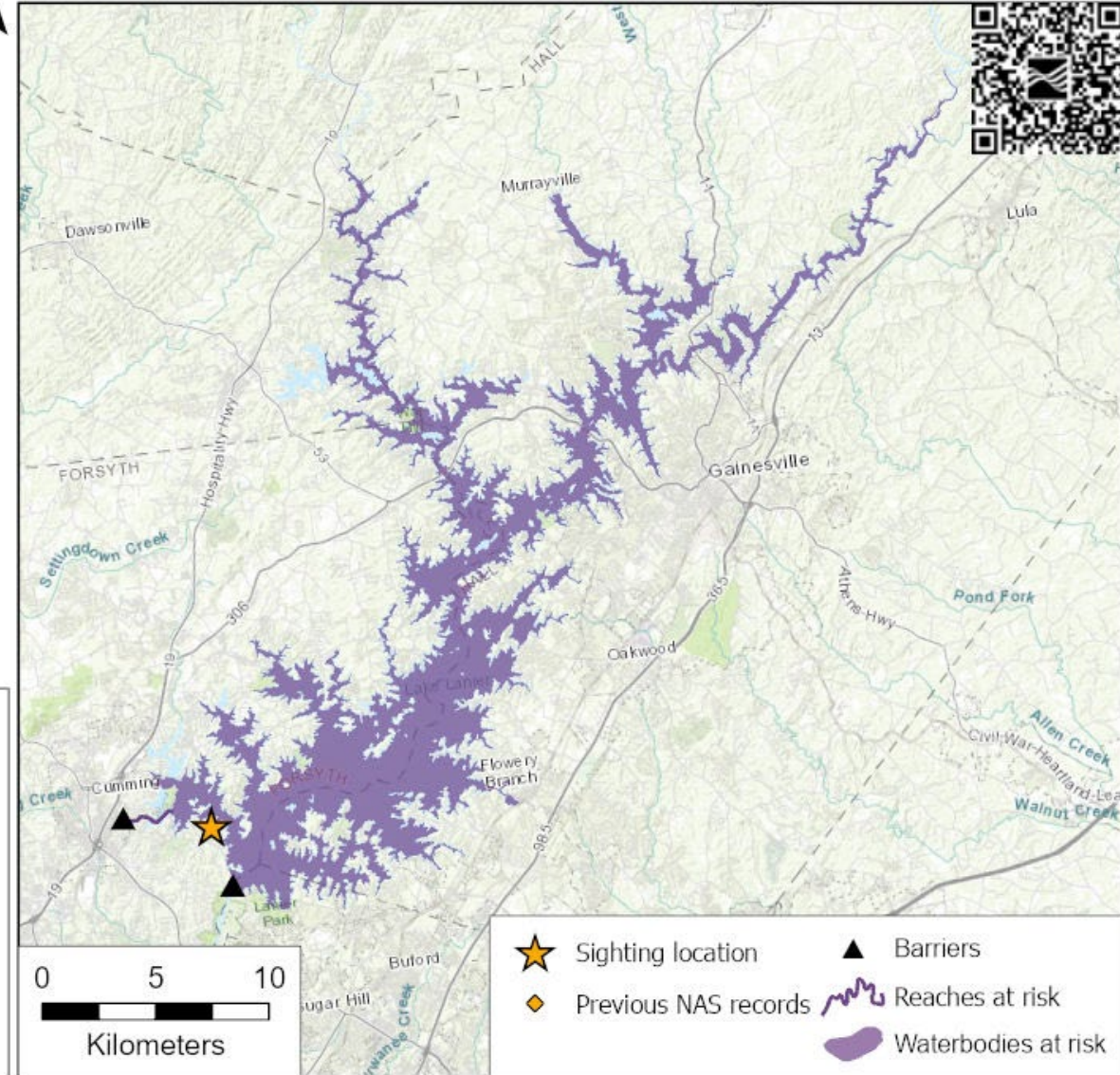
Nile Tilapia New County & Drainage in Georgia

GA DNR reported



NAS Alert Risk Mapper (ARM)

Specimen ID: 1737072
Species: *Oreochromis niloticus*
Common name: Nile Tilapia
Alert Level: County: Forsyth (GA);
Drainage: Upper Chattahoochee (03130001)
Alert Date: 2024-08-28
State/Province: Georgia
Locality: Lake Lanier
Latitude (N): 34.1856
Longitude (W): -84.0825
Collection Date: 2024-08-27
Comment:



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The map shows waterbodies at short-term risk of invasion from the species sighting. The at-risk areas are determined by species mobility and drainage barriers (dams).



Mr. Jim Page reported 70 occurrences this year (that I know of)
-22 snails, which I really appreciate

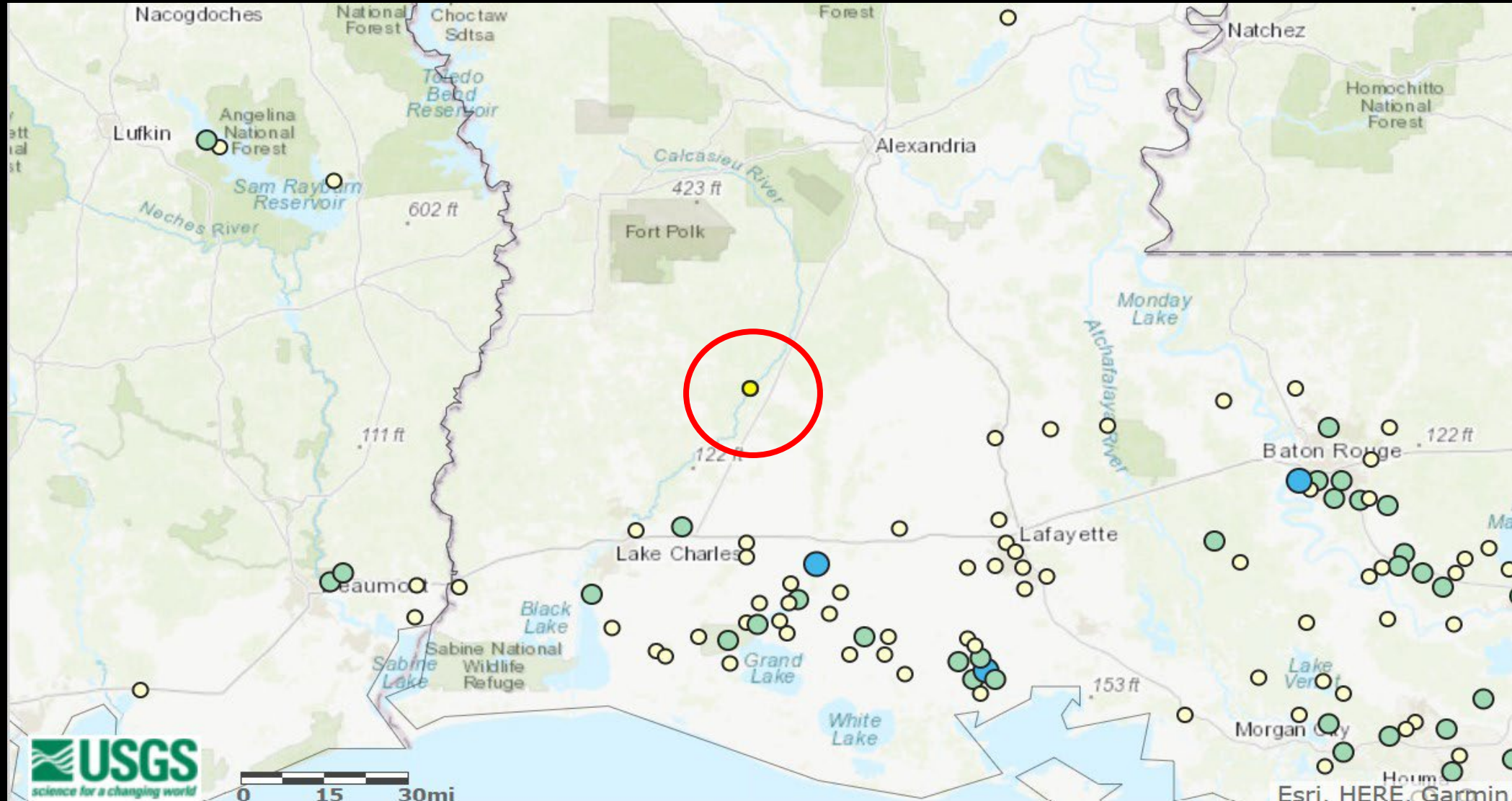


Thank you, Jim, and of
course all of you

Giant applesnail (*Pomacea maculata*)

Sighting report from LA DNR

New county



Flowering rush (*Butomus umbellatus*)

New to the state of Mississippi
iNaturalist record, found in 2023

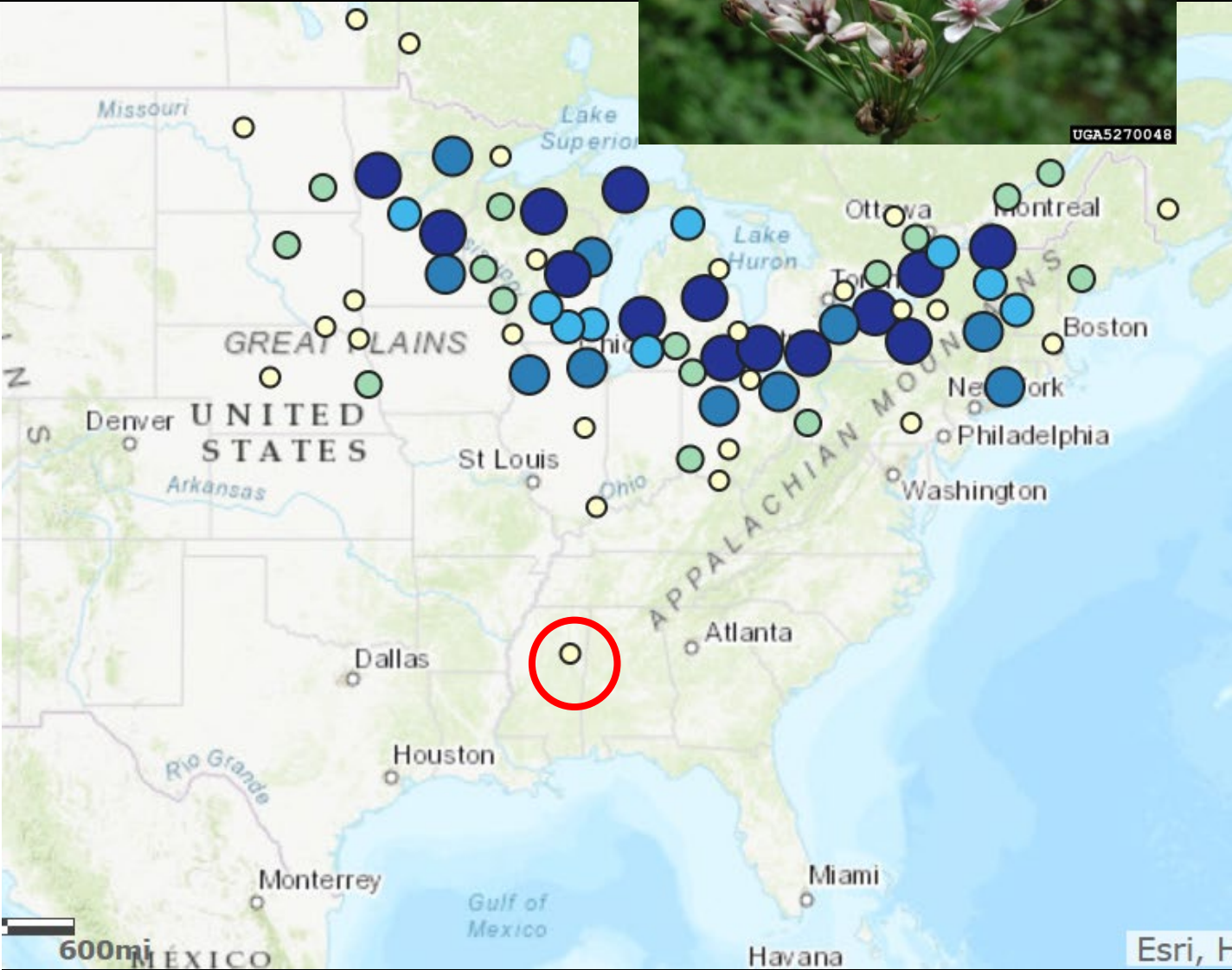
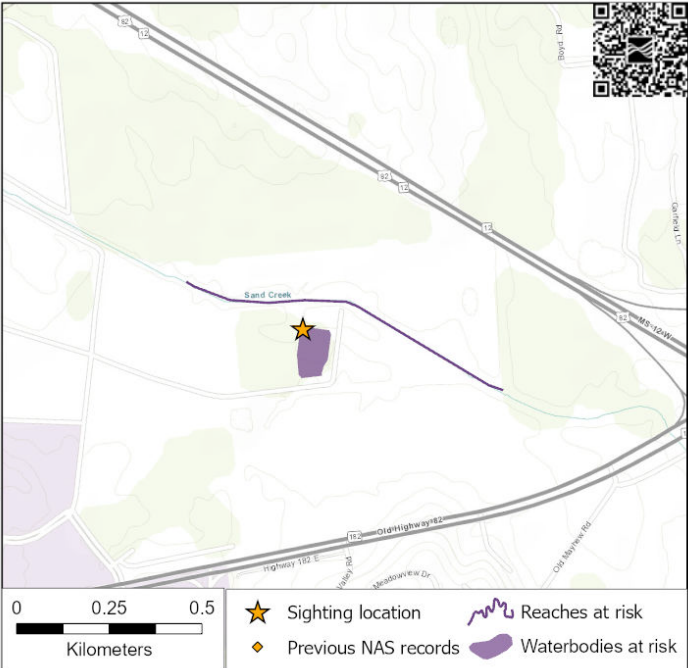


UGA5270048



NAS Alert Risk Mapper (ARM)

Specimen ID: 1740221
Species: *Butomus umbellatus*
Common name: flowering rush
Alert Level: State: Mississippi;
County: Oktibbeha (MS);
Drainage: Tibbee (03160104)
Alert Date: 2024-10-31
State/Province: Mississippi
Locality: Sand Creek at Technology Blvd
Latitude (N): 33.4747
Longitude (W): -88.7741
Collection Date: 2023-07-10
Comment:



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Vieja zonata (a cichlid from Mexico and S. America)

Puerto Rico. New to U.S.

2 animals

NAS sighting report

Status unknown

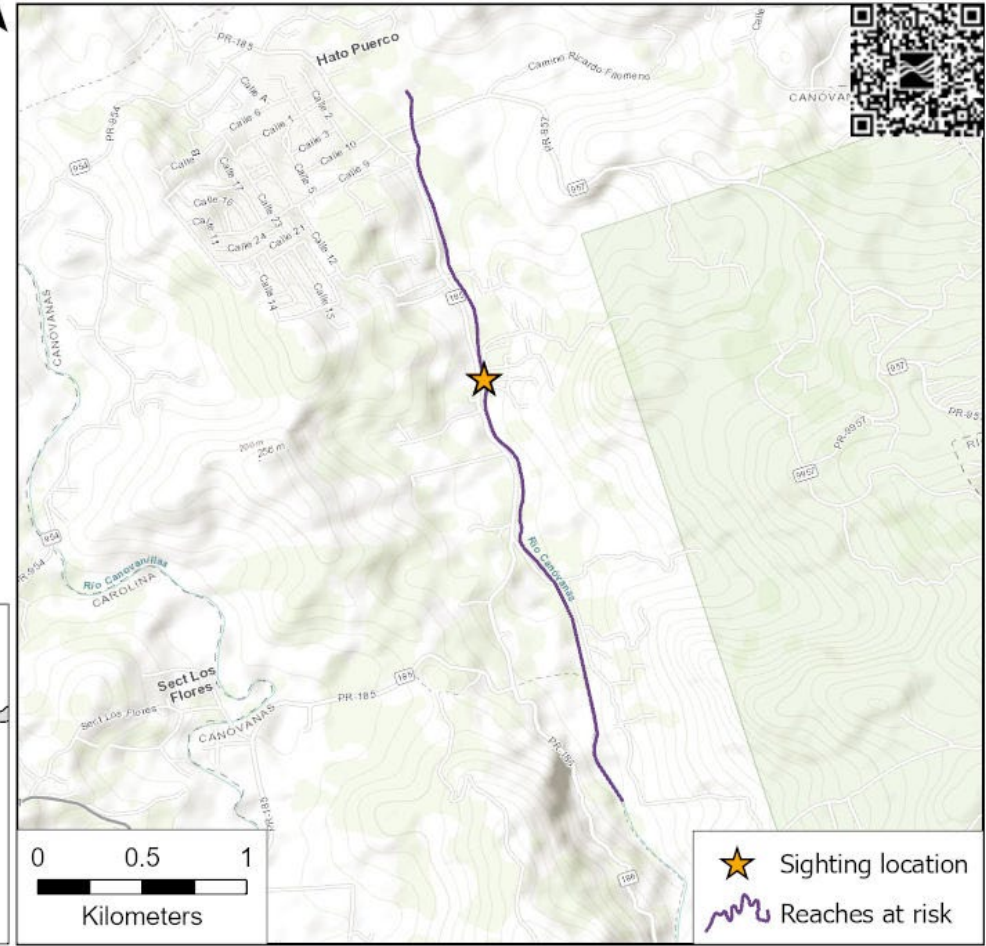


Specimen ID: 1736414
Species: *Vieja zonata*
Common name:
Alert Level: Country: US;
State: Puerto Rico;
County: Canovanas (PR);
Drainage: Eastern Puerto Rico (21010005)
Alert Date: 2024-06-12
State/Province: Puerto Rico
Locality: Rio Canovanas upstream of Campo Rico
Latitude (N): 18.3265
Longitude (W): -65.8889
Collection Date: 2024-02-22
Comment:



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NAS Alert Risk Mapper (ARM)

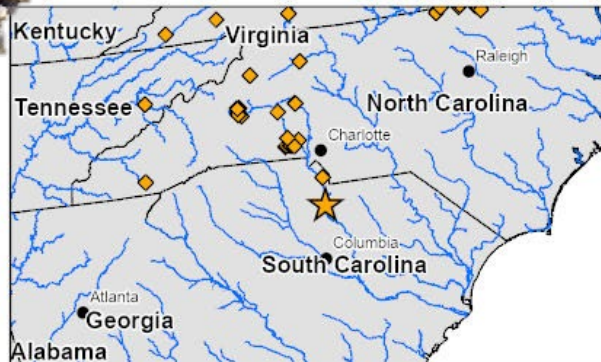


The map shows waterbodies at short-term risk of invasion from the species sighting. The at-risk areas are determined by species mobility and drainage barriers (dams).

New county in SC
Downstream occurrence
Status unknown
Reported by SCDNR



Specimen ID: 1736810
Species: *Faxonius virilis*
Common name: Virile Crayfish
Alert Level: County: Chester (SC)
Alert Date: 2024-07-12
State/Province: South Carolina
Locality: Fishing Creek Reservoir (Catawba River), Chester County
Latitude (N): 34.6166
Longitude (W): -80.8946
Collection Date: 2024-07-08
Comment:



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This map illustrates the Chesapeake Bay watershed, highlighting areas at risk for oil spills. The watershed is shaded in purple. Key features include:

- Waterbodies at risk:** Shaded purple areas representing the Chesapeake Bay and its tributaries.
- Sighting location:** Marked by a yellow star with a black outline, located near the confluence of the Potomac River and the Chesapeake Bay.
- Barriers:** Indicated by black triangles, located at the mouth of the Chesapeake Bay.
- Previous NAS records:** Marked by yellow diamonds, located near the confluence of the Potomac River and the Chesapeake Bay.
- Geographic Labels:** Dairy Branch, Hightower Rd, Clarks River, Bethel Boat Landing Rd, Edgewater Golf Club, Bear Creek, Gallop Ridge Blvd, Spring Park, Great Falls Hwy, Green Creek, and Bethel Boat Landing Rd.
- Scale:** A scale bar at the bottom left shows distances in kilometers (0, 1, 2).
- Legend:** A legend at the bottom right defines the symbols used on the map.
- QR Code:** A QR code is located in the top right corner, linking to the map's metadata.

The map shows waterbodies at short-term risk of invasion from the species sighting. The at-risk areas are determined by species mobility and drainage barriers (dams).

Hybrid peacock cichlid (*Aulonocara* sp.)

New US, Texas

African cichlid

1 animal caught and released

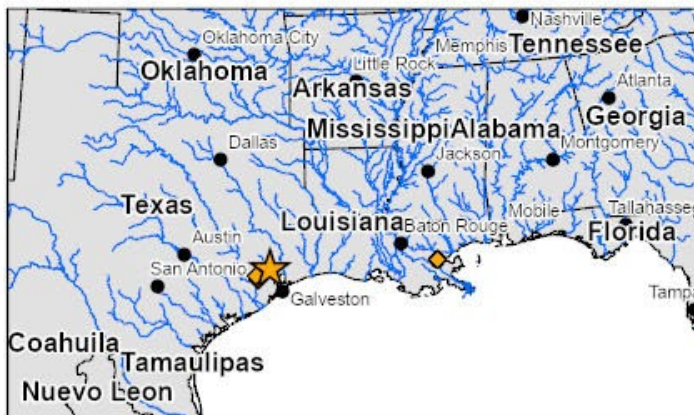
Reported by TPWD



Cuchia
(*Monopterus albus*)
(a swamp eel)
New County, TX
NAS sighting report
Reported to TPWD

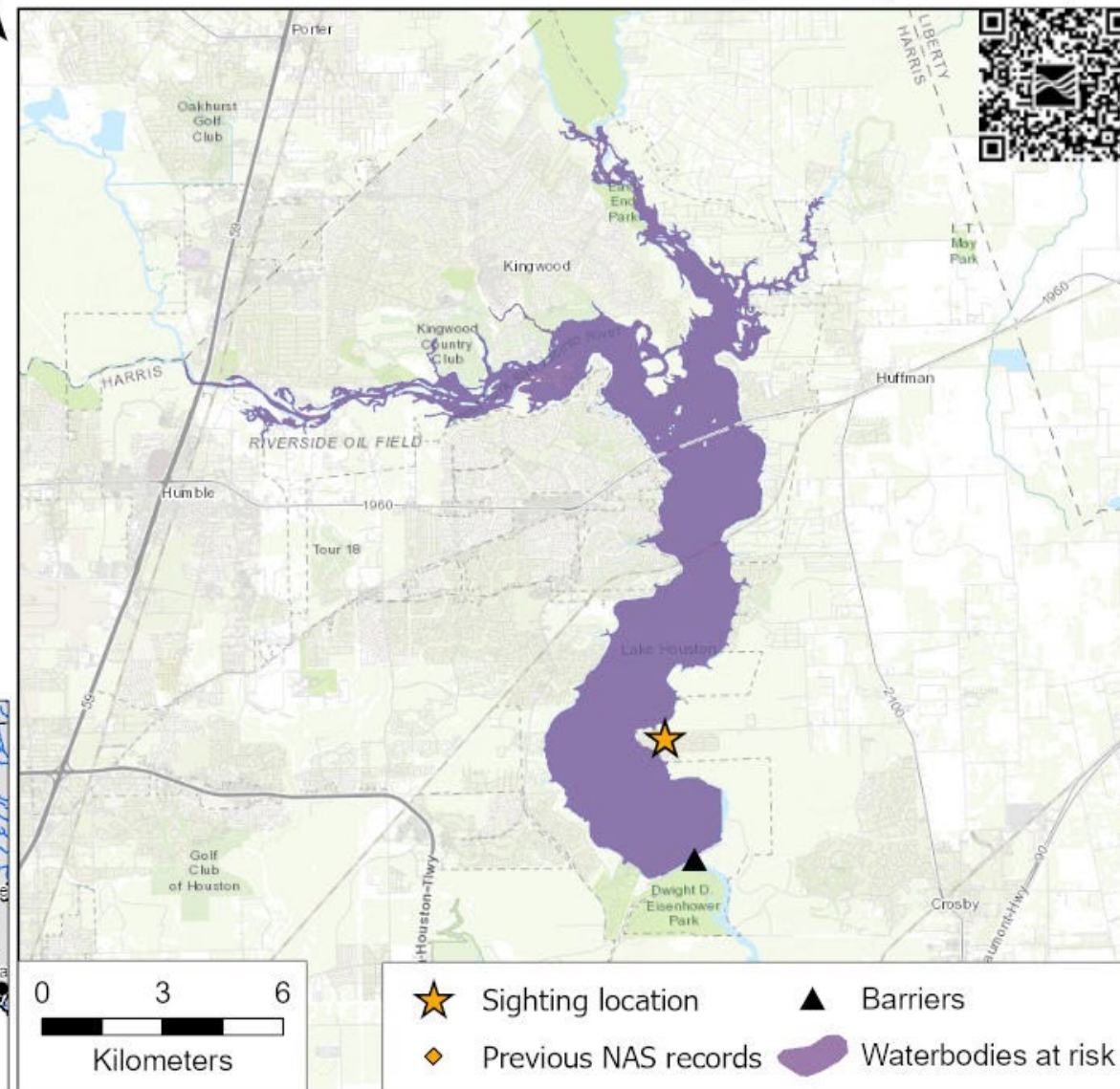


Specimen ID: 1736993
Species: *Monopterus albus*
Common name: cuchia
Alert Level: County: Harris (TX);
Drainage: West Fork San Jacinto (12040101)
Alert Date: 2024-08-16
State/Province: Texas
Locality: Lake Houston
Latitude (N): 29.9465
Longitude (W): -95.1398
Collection Date: 2024-05-02
Comment:



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NAS Alert Risk Mapper (ARM)



The map shows waterbodies at short-term risk of invasion from the species sighting. The at-risk areas are determined by species mobility and drainage barriers (dams).

Novel Species in the U.S. : Golden Mussel

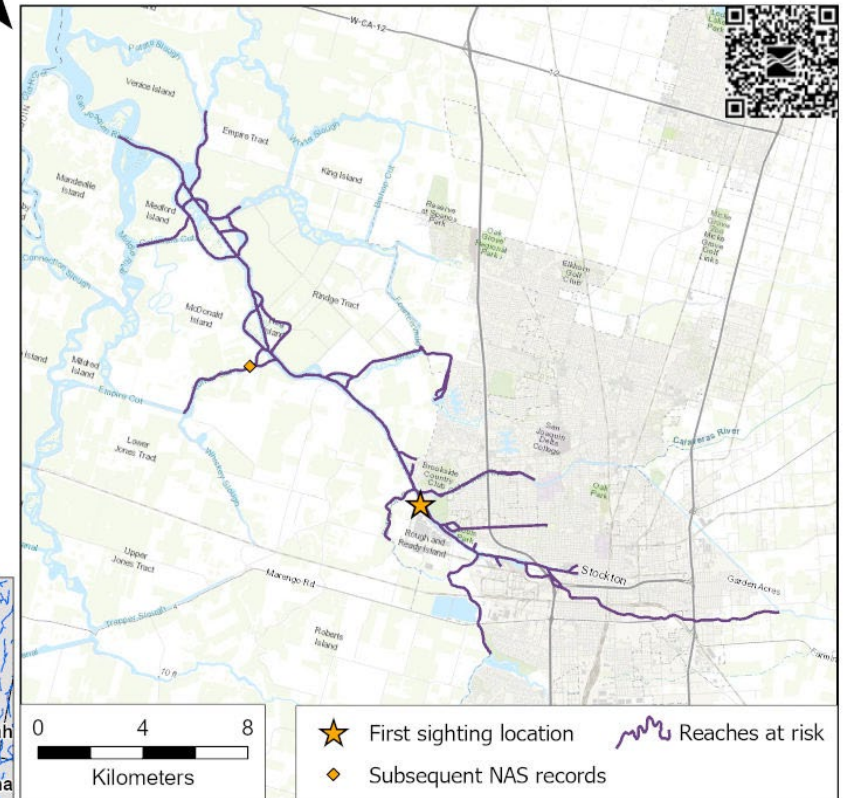
Limnoperna fortunei
San Joaquin River California



Specimen ID: 1740261
Species: *Limnoperna fortunei*
Common name: Golden Mussel
Alert Level: Country: US;
State: California;
County: San Joaquin (CA);
Drainage: San Joaquin Delta (18040003)
Alert Date: 2024-11-01
State/Province: California
Locality: San Joaquin River at Rough and Ready Island
Latitude (N): 37.9627
Longitude (W): -121.366
Collection Date: 2024-10-17
Comment: Found at 3 sites in 8 days, including Turner Cut (1740262) on 10-22 and San Luis Reservoir (1740264) on 10-25



NAS Alert Risk Mapper (ARM)

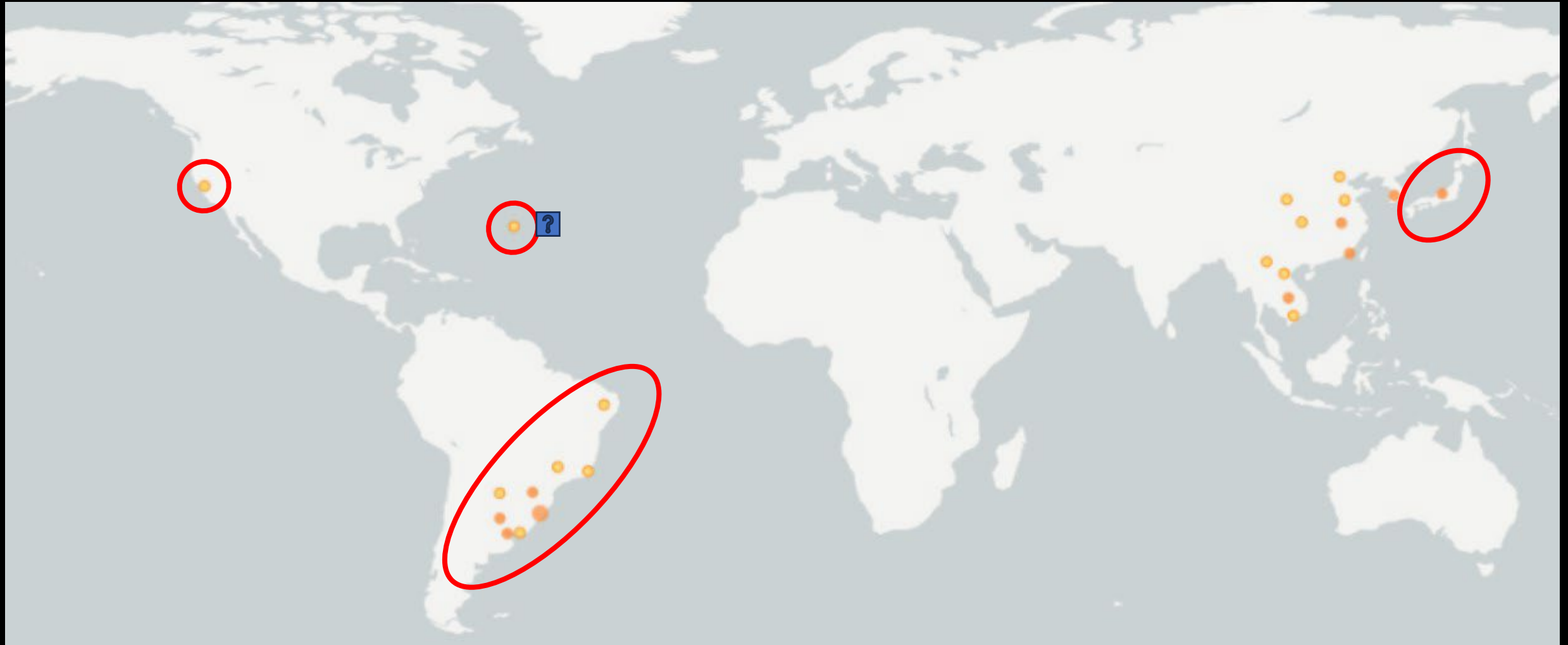


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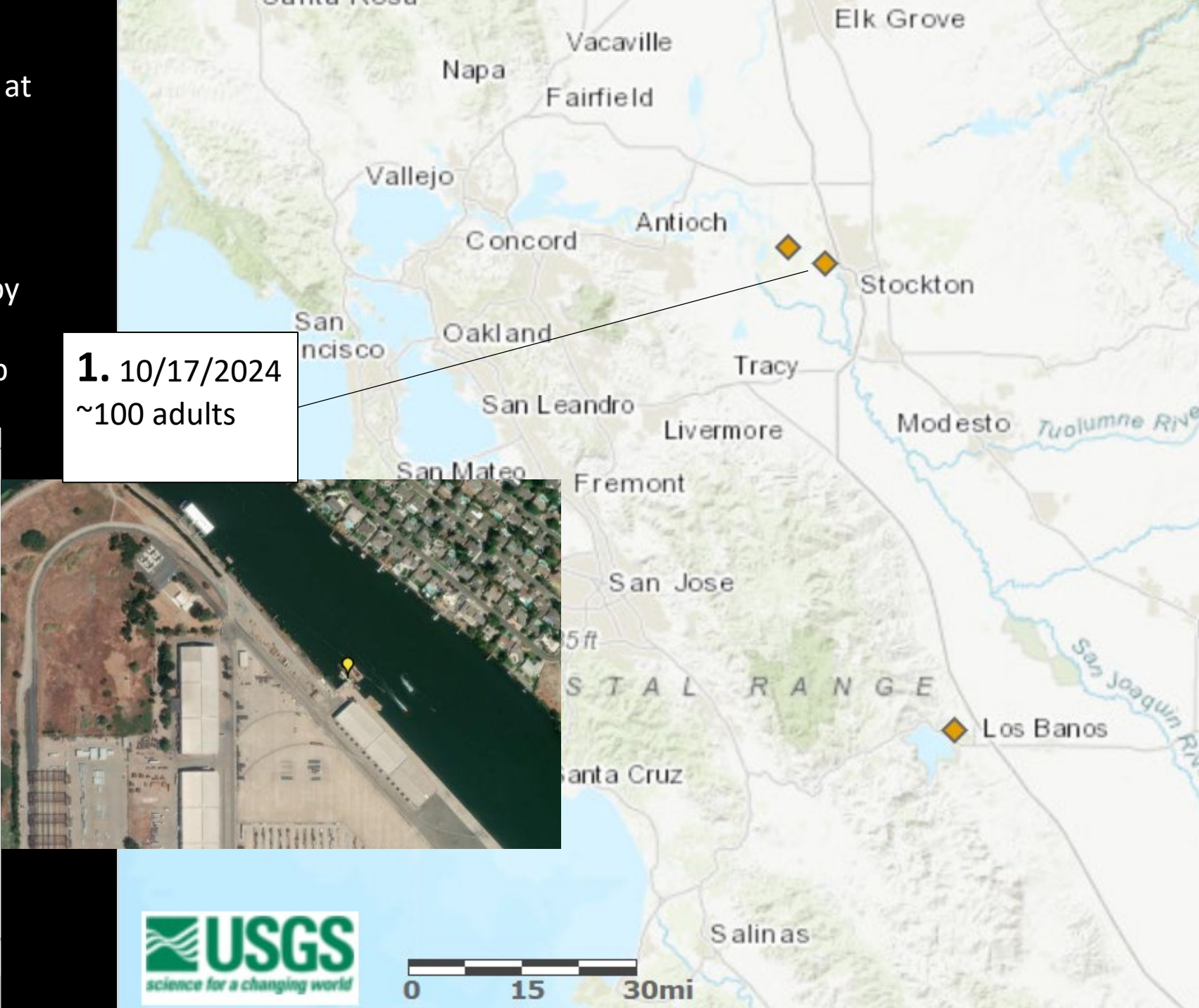
Novel Species in the U.S. : Golden Mussel (*Limnoperna fortunei*)

- Native to SE Asia; China , Laos, Cambodia, Vietnam, Korea(?), Indonesia and Thailand
- Introduced to Japan and Several S. American Countries
- California introduction is first in N. America



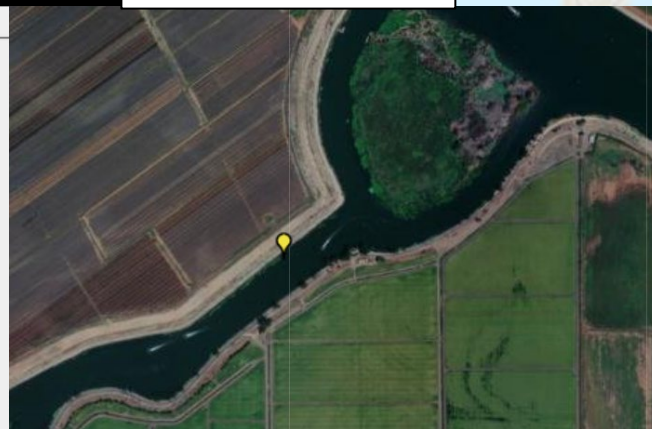
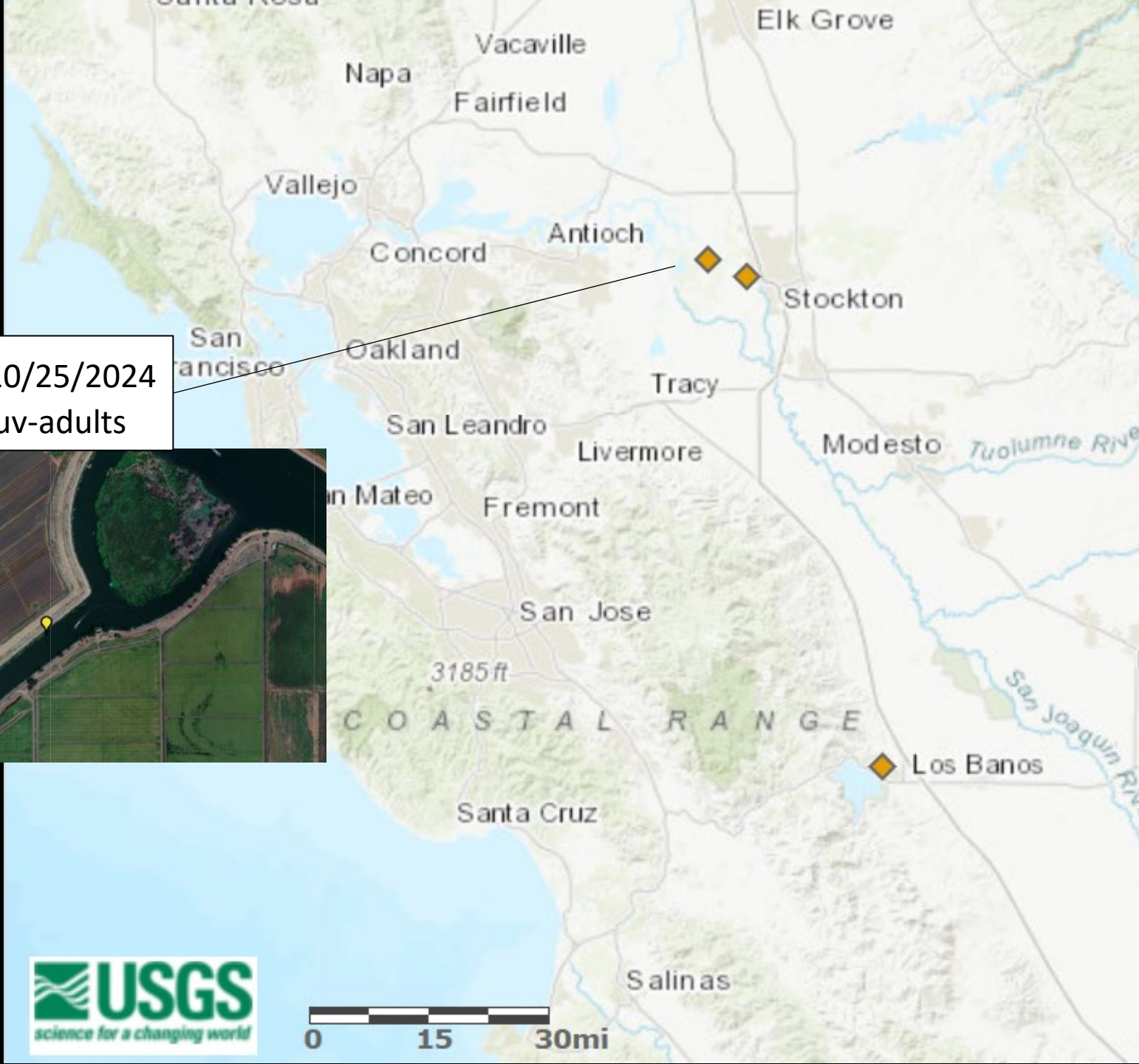
- Found while monitoring for dreissenids at monitoring station
- Three sites in 8 day period
- Species identity genetically confirmed by UC Davis Genomic Variation Lab; CA Department of Food and Agriculture lab

1. 10/17/2024
~100 adults

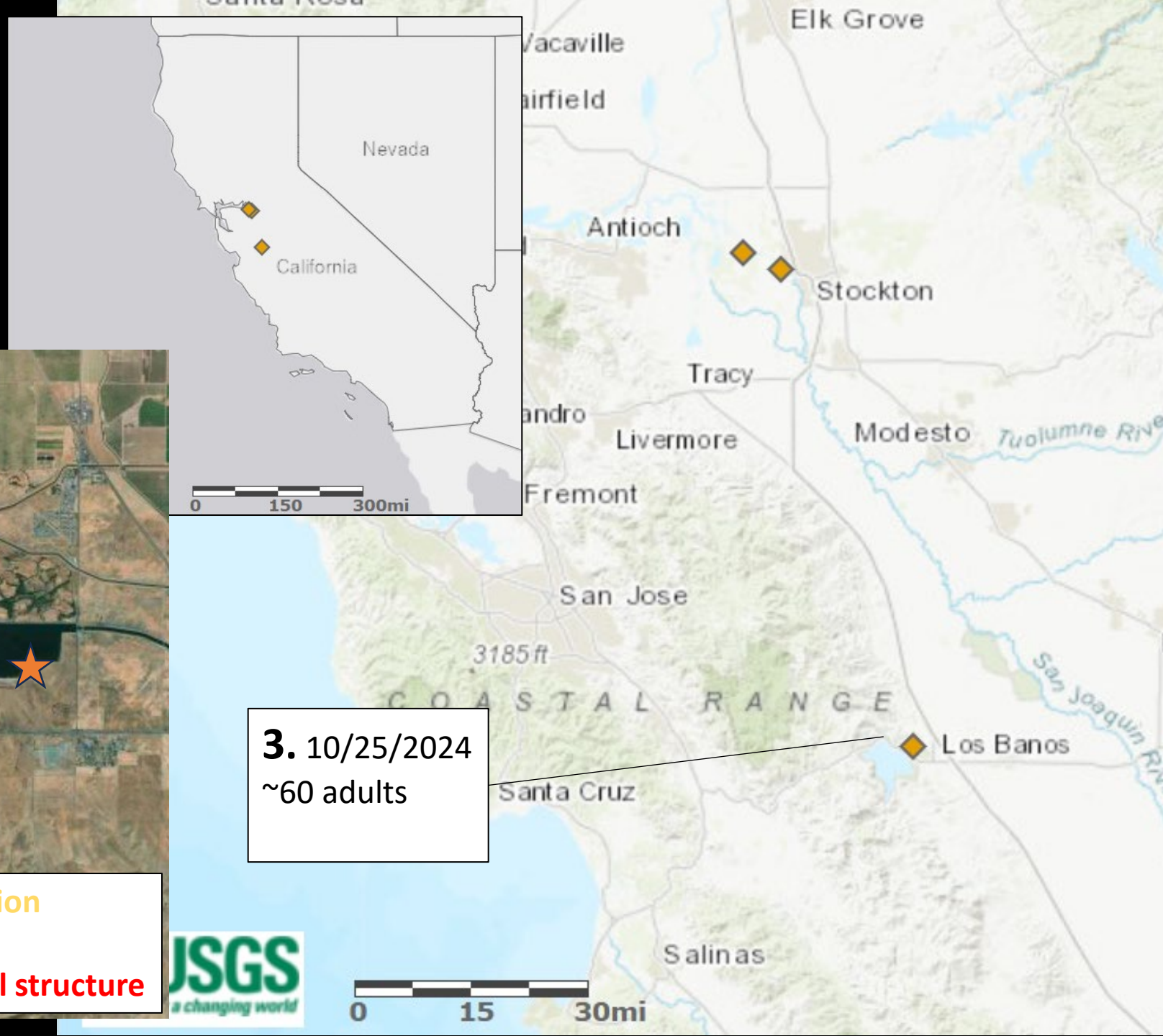


- Found while monitoring for dreissenids at monitoring station
- Species identity genetically confirmed by UC Davis Genomic Variation Lab; CA Department of Food and Agriculture lab

2. 10/25/2024
~5 juv-adults



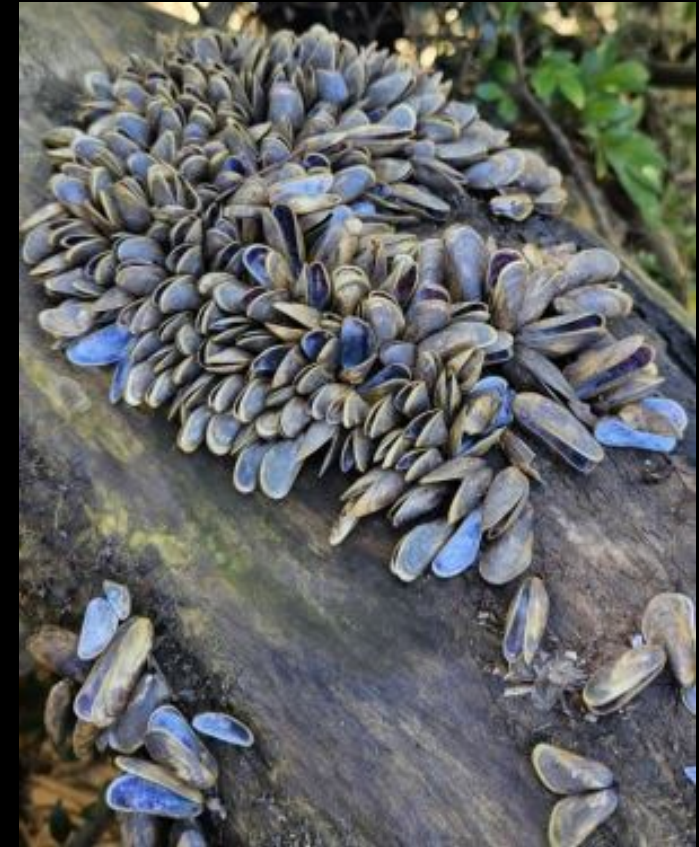
- Found on settling plates. Species confirmed by CDFA lab DNA analysis.
- O'Neill Forebay Reservoir, adjacent to the San Luis Reservoir



Golden Mussel (*Limnoperna fortunei*)



- Ranked as High in USFWS ESRR
- Ranked as High Risk in USGS-collaborated horizon scan for Florida 2019-2023 (Lieurance et al. 2023)
- Established in S. America and Japan; warm-water tolerant, cold as well
- Planktonic, free-swimming veliger
- Byssal threads, biofouling
- Saltwater tolerant, estuarine tolerant
- Pathway: Likely shipping fouling or ballast; potentially hitching on vessels secondarily
- Mississippi drainage has been thought to be susceptible in literature



Eduardo Tarnowski Siemionko ©

Preparing your state for monitoring and prevention



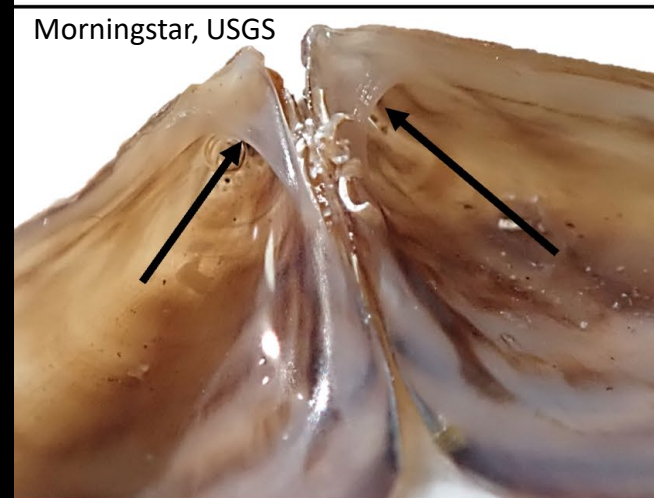
- NAS/GLANSIS species profile
→ let us know your information needs
- Learn how to identify, monitor, best prevention; NAS is working with UF to prepare keys and information about risk; coming very soon



Zebra Mussel (*Dreissena polymorpha*)



Golden Mussel (*Limnoperna fortunei*)

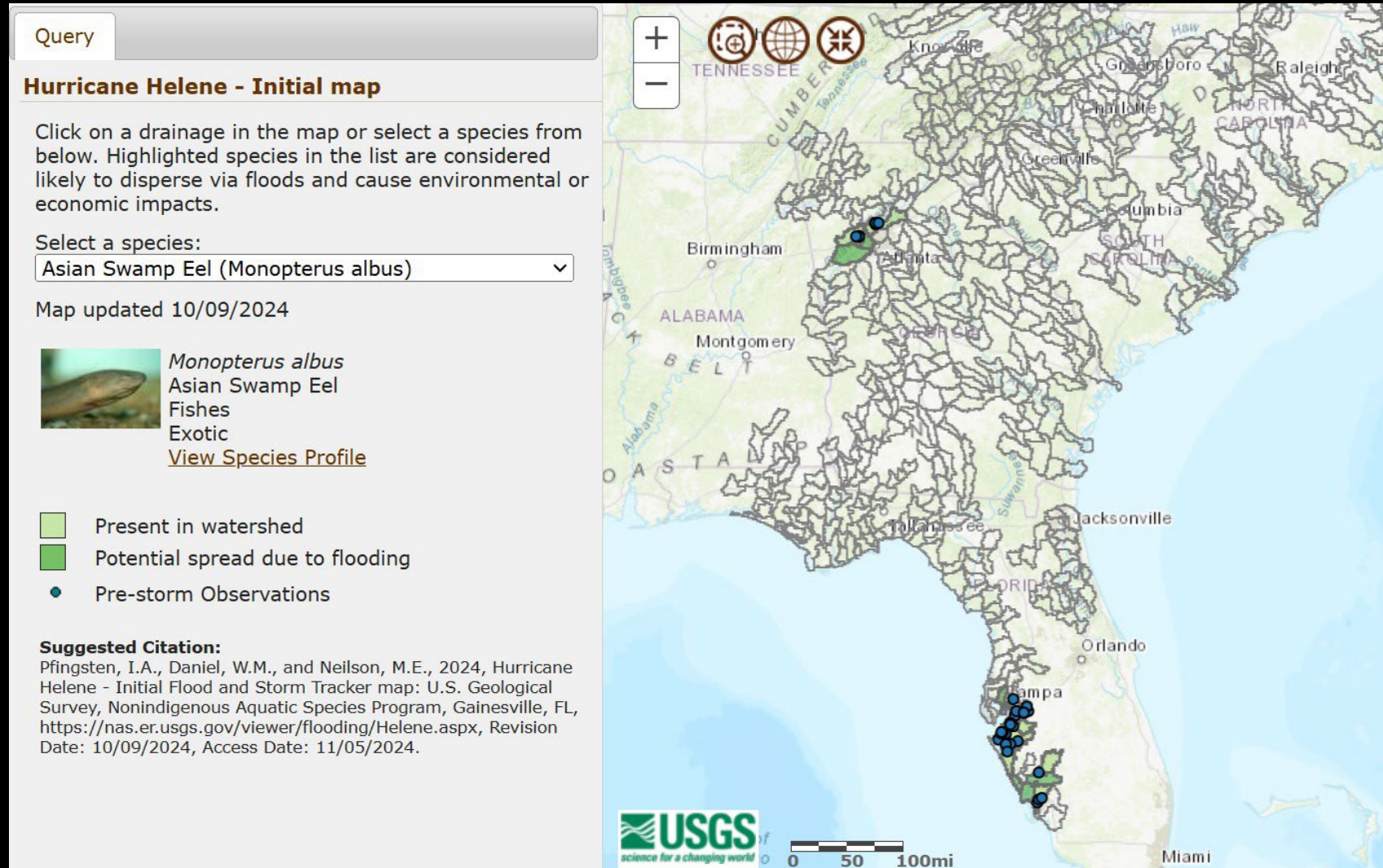


Morningstar, USGS

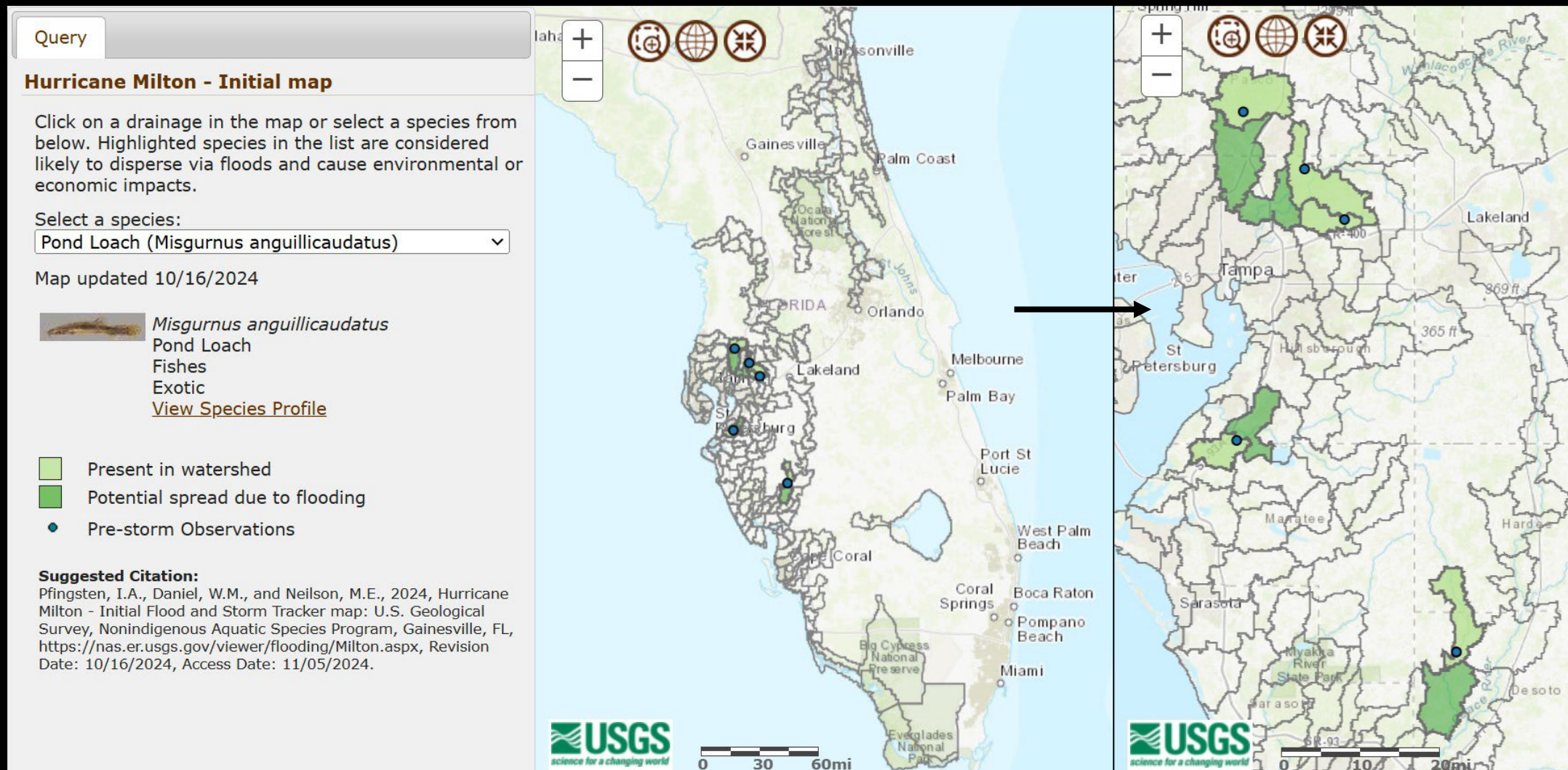


Boltovskoy
CC BY-SA 4.0

Hurricane Helene: Flood and Storm Tracker (FaST)



Hurricane Milton: Flood and Storm Tracker (FaST)





SE RISCC Workshop

Climate change and invasive species movement and range shifts

November 13-14, Gainesville, Florida

- Interactive, work through the issues
 - Sleeper species, tropicalization, neontic species, etc.
- Identify data gaps and management challenges
- Creating frameworks product to guide future efforts





Other things at NAS

- Spring swamp eel slam and summit
- Fish Slam December 3-5: Loxahatchee, Florida
- Everglades fish modeling work (EM Dean)
- Invertebrate National Horizon Scan
- Puerto Rico and US Virgin Islands Horizon Scan
- New USGS Dreissenid Mussel Fact Sheet out

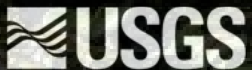


Preliminary Information-Subject to Revision. Not for Citation or Distribution.

USGS NAS Team



- WESLEY DANIEL – COORDINATOR, INVERTS, MOLLUSKS, HERPS, AND MAMMALS (WDANIEL@USGS.GOV)
- MATTHEW NEILSON – FISHES AND TECHNICAL DETAILS (MNEILSON@USGS.GOV)
- IAN PFINGSTEN – PLANTS (IPFINGSTEN@USGS.GOV)
- CAYLA MORNINGSTAR – MOLLUSKS (CMORNINGSTAR@USGS.GOV)
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