



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

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Center

GSARP June 2022

USGS Nonindigenous Aquatic Species Database

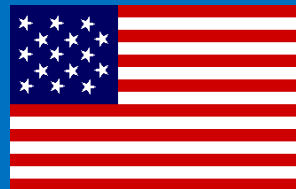
Number of species tracked
1390



Total
Records
681,102*

Oldest
Record

1700



257 taxa



69 taxa



82 taxa



789 taxa

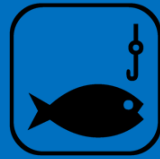


6 taxa



187 taxa

USGS Nonindigenous Aquatic Species Database



Data from:

museum collections

researchers

state and federal agencies

other databases

scientific literature

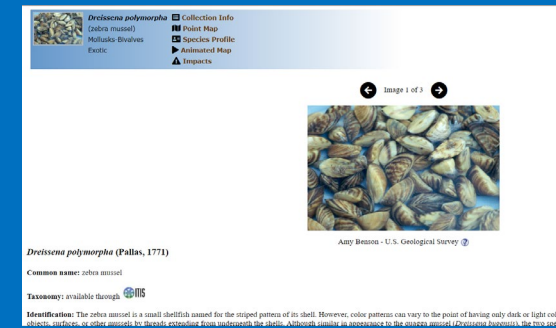
public sightings reports

eDNA (soon)

NAS email
subscribers

1120

Most popular page: Zebra mussel



Data windows:



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



NAS Alert System

New species in the US |
State | Country |
Drainage

New Species Alerts: Dec 1st 2021- June 22 2022



12 NAS alerts
11 species

County 4

Drainage 7

State 1



1



2



4



5

4

3

3

2

Quagga mussel (*Dreissena rostriformis bugensis*) New to Texas

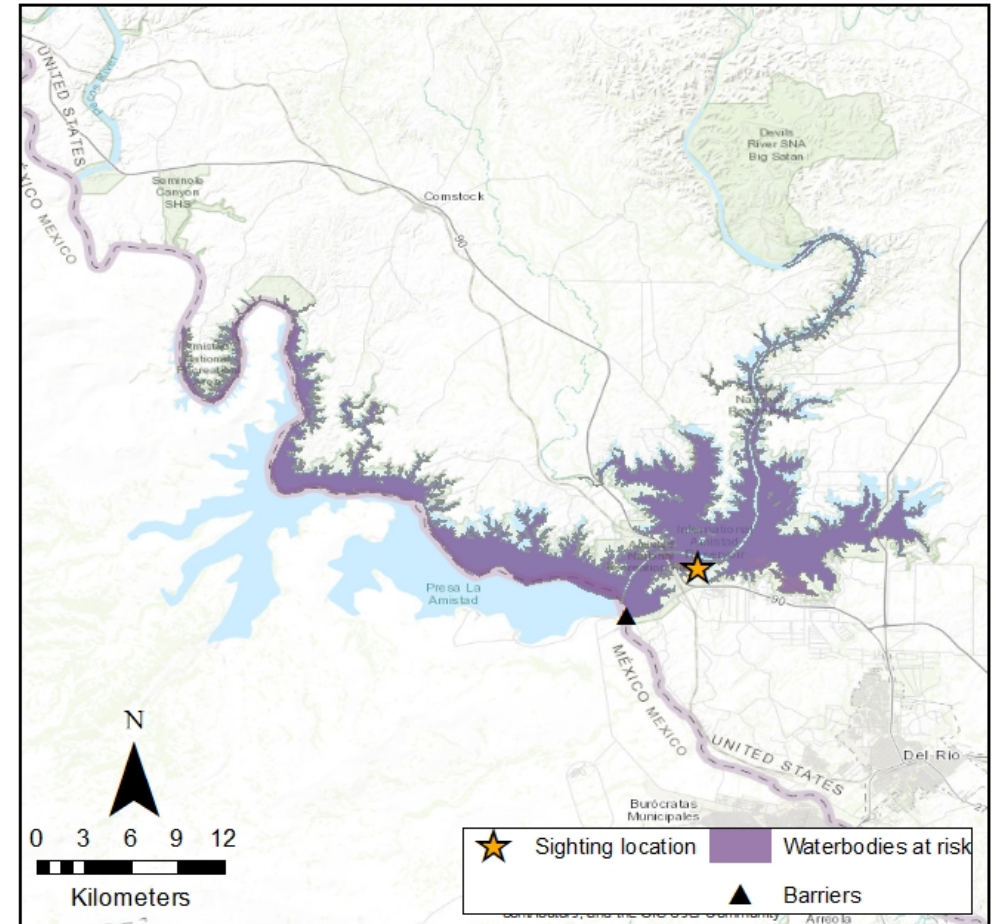


Specimen ID:	1692079
Species:	<i>Dreissena rostriformis bugensis</i>
Common name:	quagga mussel
Alert level:	State: Texas; County: Val Verde (TX); Drainage: Lower Devils (13040302)
Alert date:	03/25/2022
State:	Texas
Locality:	International Amistad Reservoir, Diablo East
Latitude (N):	29.4781
Longitude (W):	-101.016
Collection date:	06/00/2021



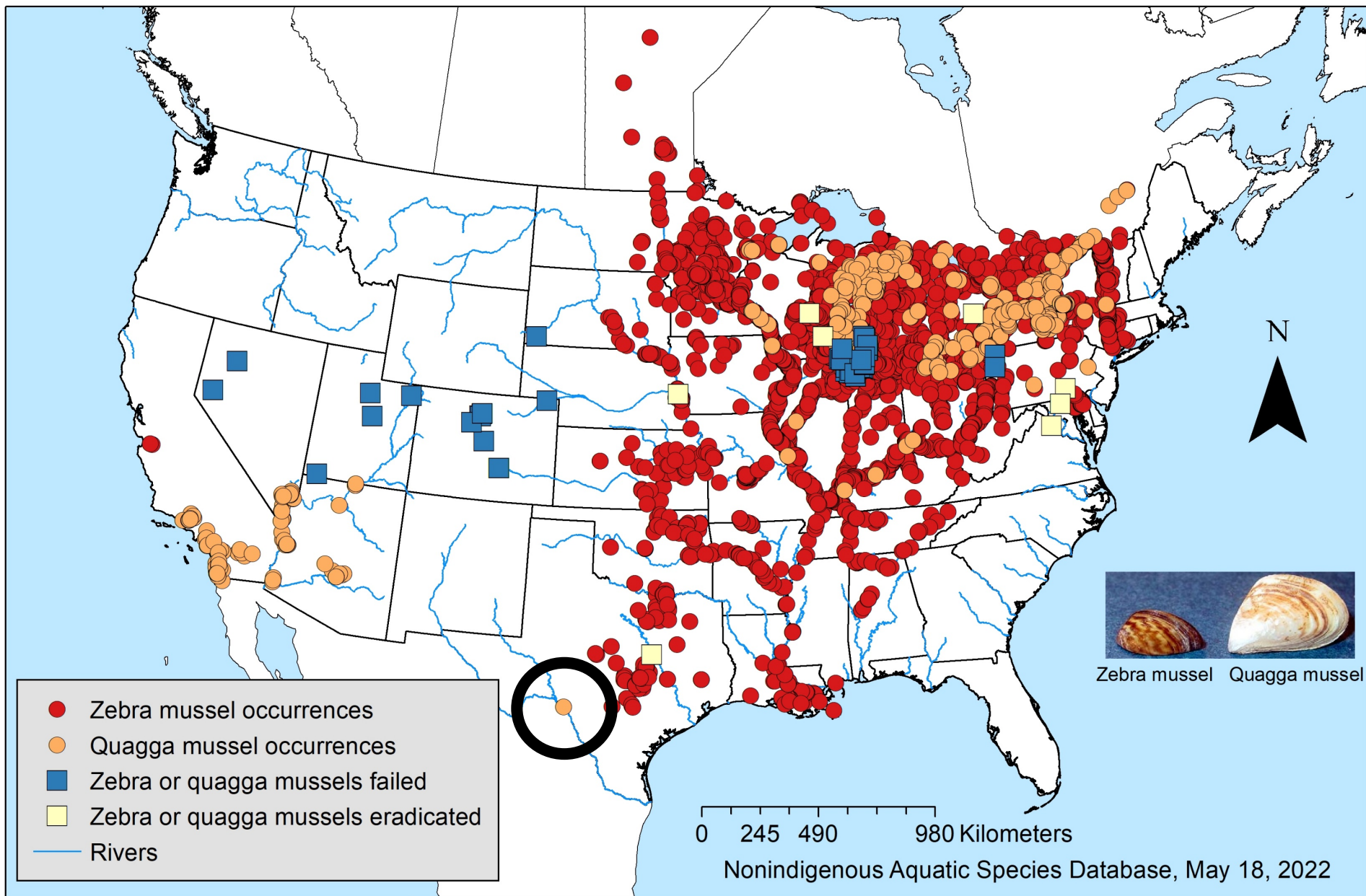
Data Disclaimer: These data are preliminary or provisional and are subject to revision. They are being provided to meet the need for timely best science. The data have not received final approval by the U.S. Geological Survey (USGS) and are provided on the condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from the authorized or unauthorized use of the data.

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).

Zebra and Quagga Mussel Sightings





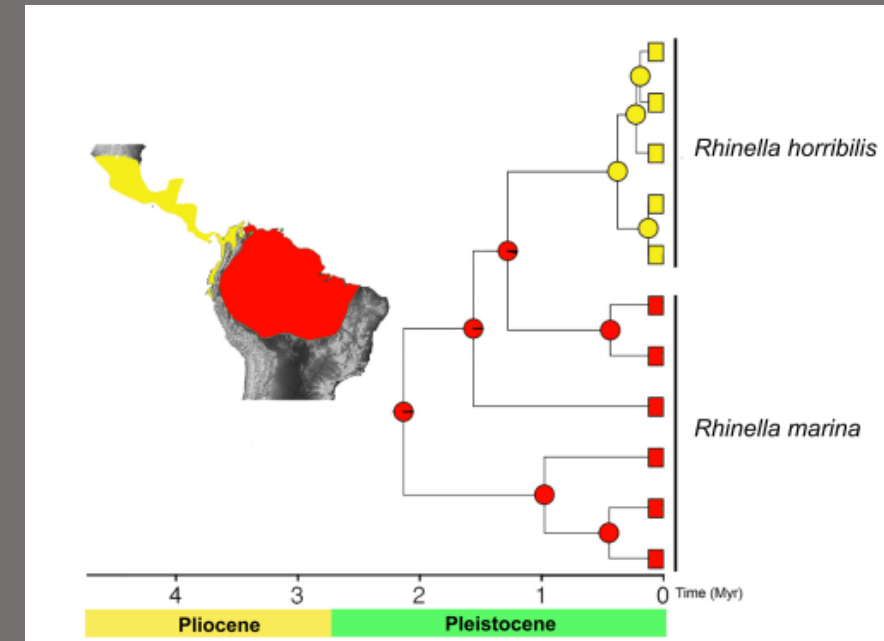
A new(ish) species in Florida

Mesoamerican Cane Toad (*Rhinella horribilis*)

- *Rhinella marina* split; *R. horribilis* northern population based on skull morphology and genetics (2016)
- Three specimens of *R. horribilis* in Polk Co., FL (Aug. 2021); no radiographed individuals were identified as *R. marina*
- Further research needed for relative distribution of *R. horribilis* and *R. marina* in FL.



Rhinella horribilis ; Polk Co., FL. Aug. 17, 2021
FLMNH Cat# 192727



Potential new species in the United States “Tire track eel”

(*Mastacembelus favus*)



****Waiting for taxonomic confirmation**



Actual Specimen

- Popular aquarium fish
- Status unknown (2 found)
- Resampling recovered no more specimens



Actual Specimen

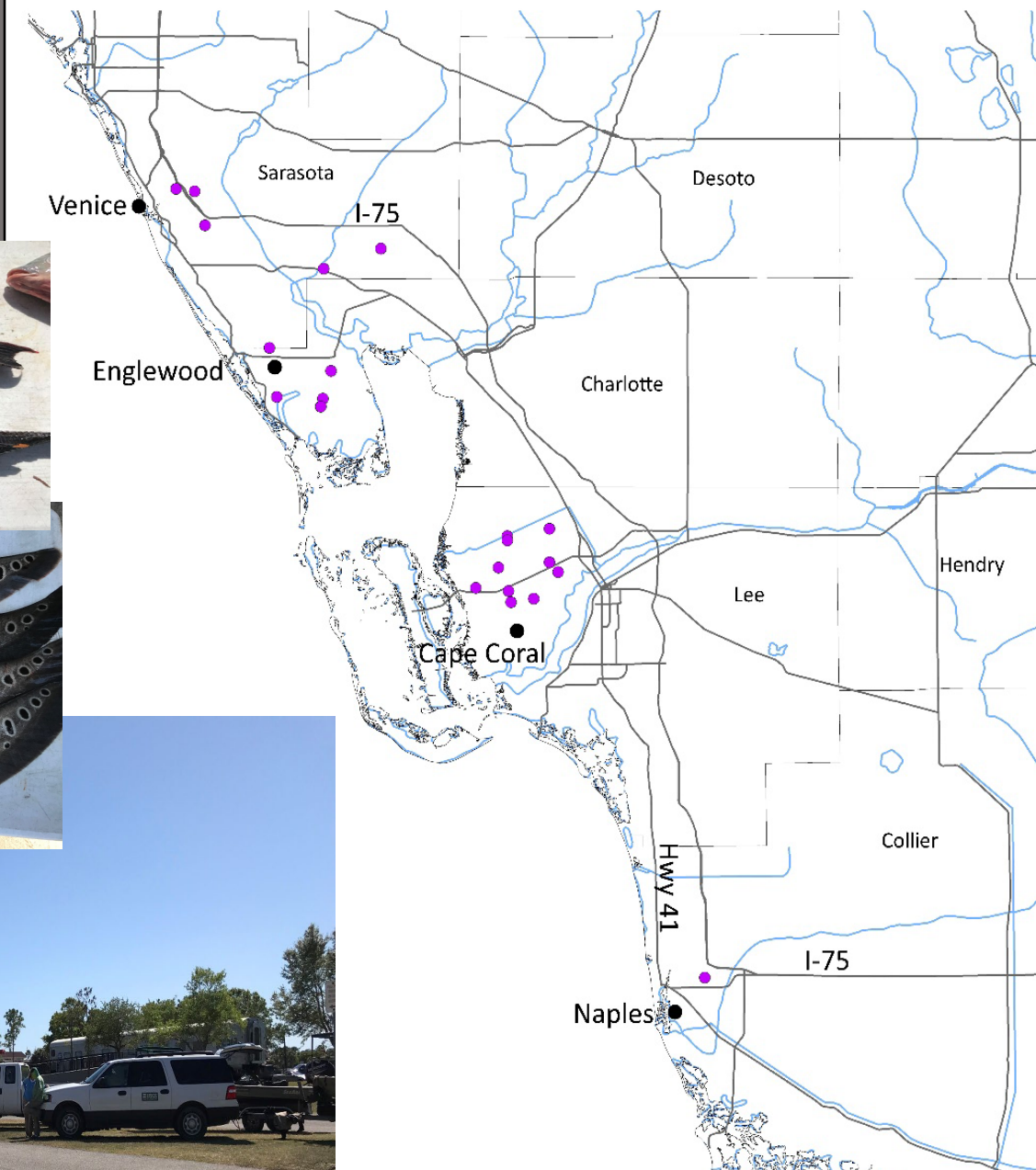
Fish Slam Bioblitz



Scientific Name	Common Name
<i>Dorosoma cepedianum</i>	gizzard shad
<i>Ctenophryngodon idella</i>	grass carp
<i>Cyprinus rubrofuscus</i>	koi
<i>Chitala ornata</i>	clown knifefish
<i>Pterygoplichthys</i> spp.	sailfin catfish
<i>Clarias batrachus</i>	walking catfish
<i>Monopterus javanensis</i>	Asian swamp eel
<i>Mastacembelus favus</i>	tire track eel
<i>Astronotus ocellatus</i>	oscar
<i>Cichla ocellaris</i>	butterfly peacock cichlid
<i>Mayaheros urophthalmus</i>	Mayan cichlid
<i>Hemichromis letourneuxi</i>	African jewelfish
<i>Oreochromis</i> spp.	tilapia
<i>Pelmatolapia mariae</i>	spotted tilapia



Fish Slam March 2022



Southeast Fish Slam Bioblitz?



Great way to..

- uncover new species before large population establishment
- foster collaboration with other biological agency partners & share information
- spread awareness– the press often shows, citizen scientists
- ensure important specimens enter museums



Not just electroshocking fish....

-Often include “Fish Chat”, a small, **conference-like forum** to share research, management efforts, ask questions, foster collaboration

-Record **other nonnative species**, such as plants and invertebrates

-Helps managers **sample** areas they might not have time or manpower to sample



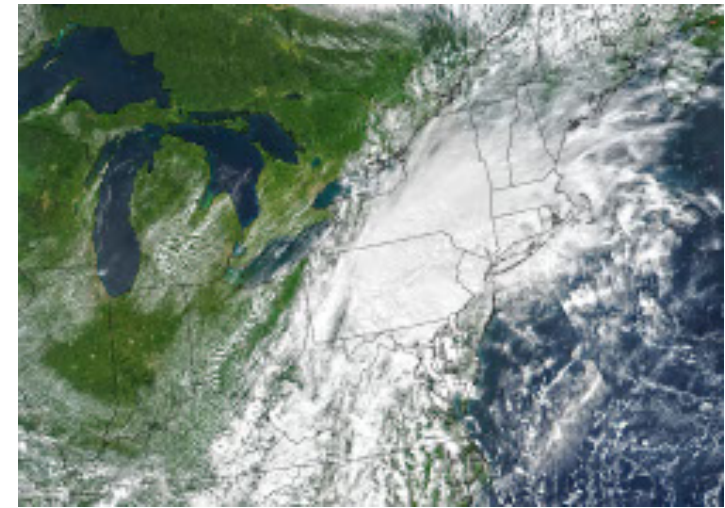
Next Fish Slam/Fish Chat

Southeast Florida

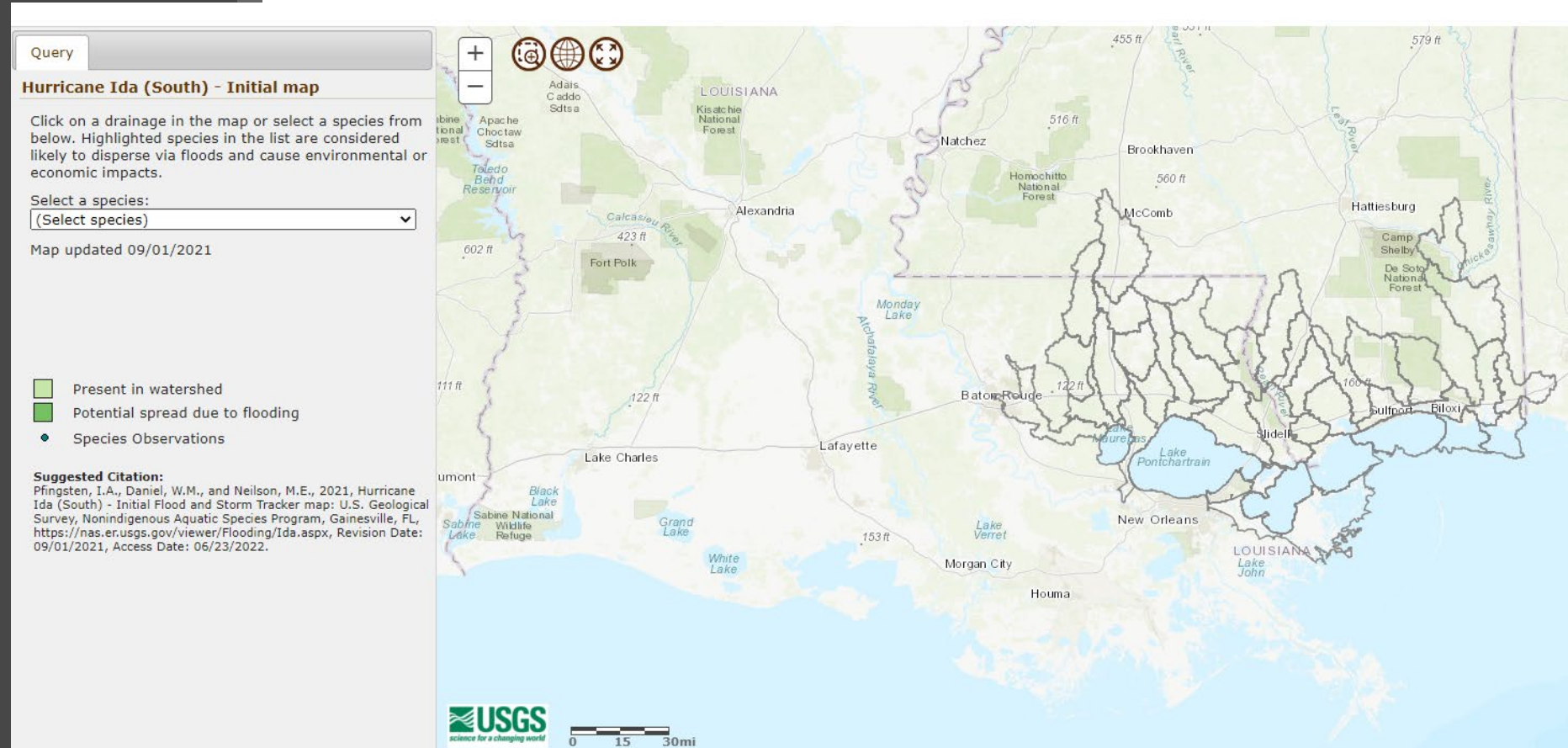
Dec 2022

Schofield, P.J., 2020. Expert bioblitzes facilitate non-native fish tracking and interagency partnerships. *Management of Biological Invasions*, 11(1), p.139.

NAS Flood and Storm Tracker (FaST) Maps



- NAS staff is preparing to map for the coming storm season
- 2022 first year hurricane season starting June 1 instead of June 15



Query





Hurricane Dorian - Revised map

Click on a drainage in the map or select a species from below.

Select a species:

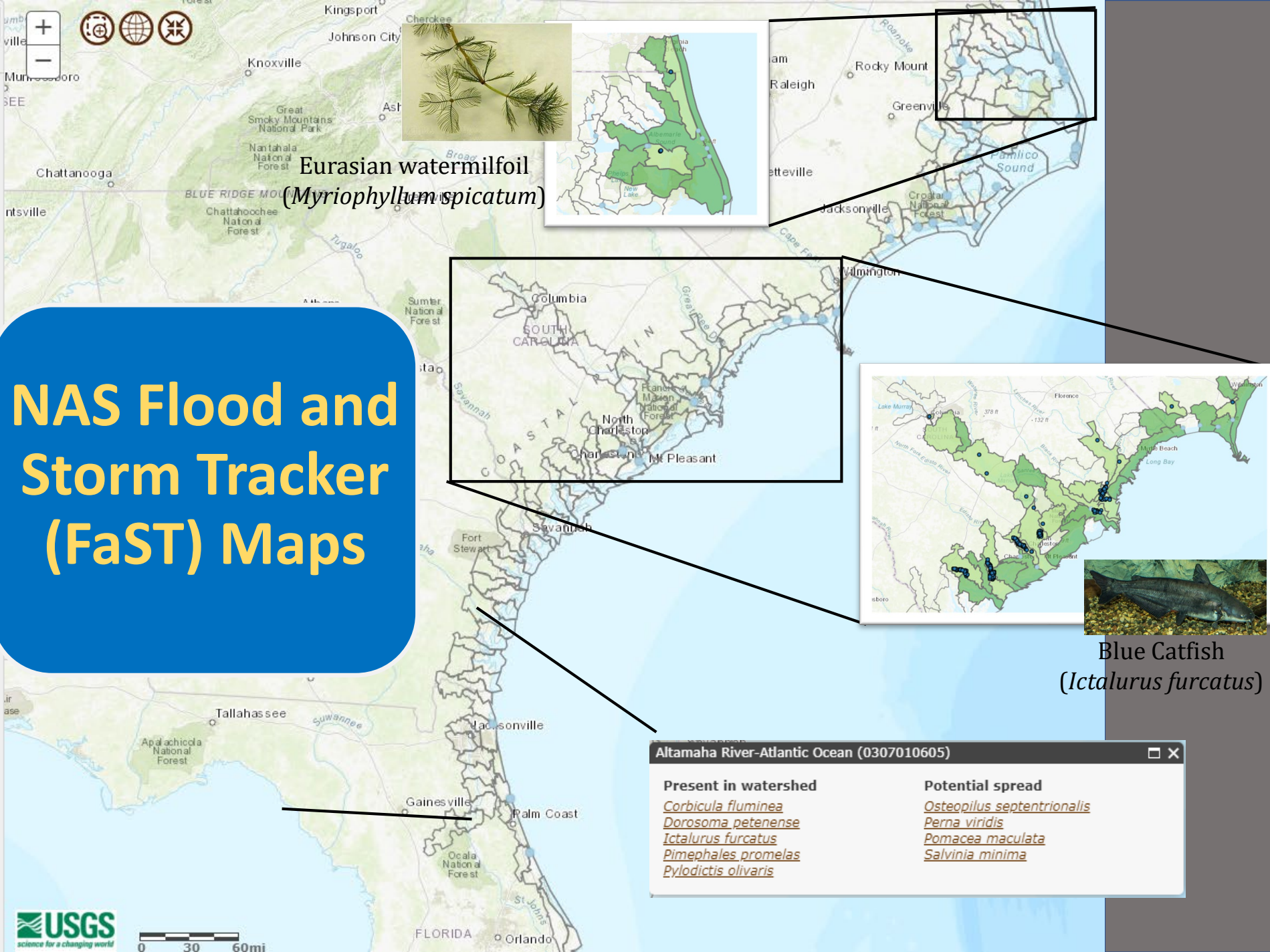
(Select species)

Map updated 10/24/2019

-  Present in watershed
-  Potential spread due to flooding
-  Connection points
-  Species Observations

NAS Flood and Storm Tracker (FaST) Maps

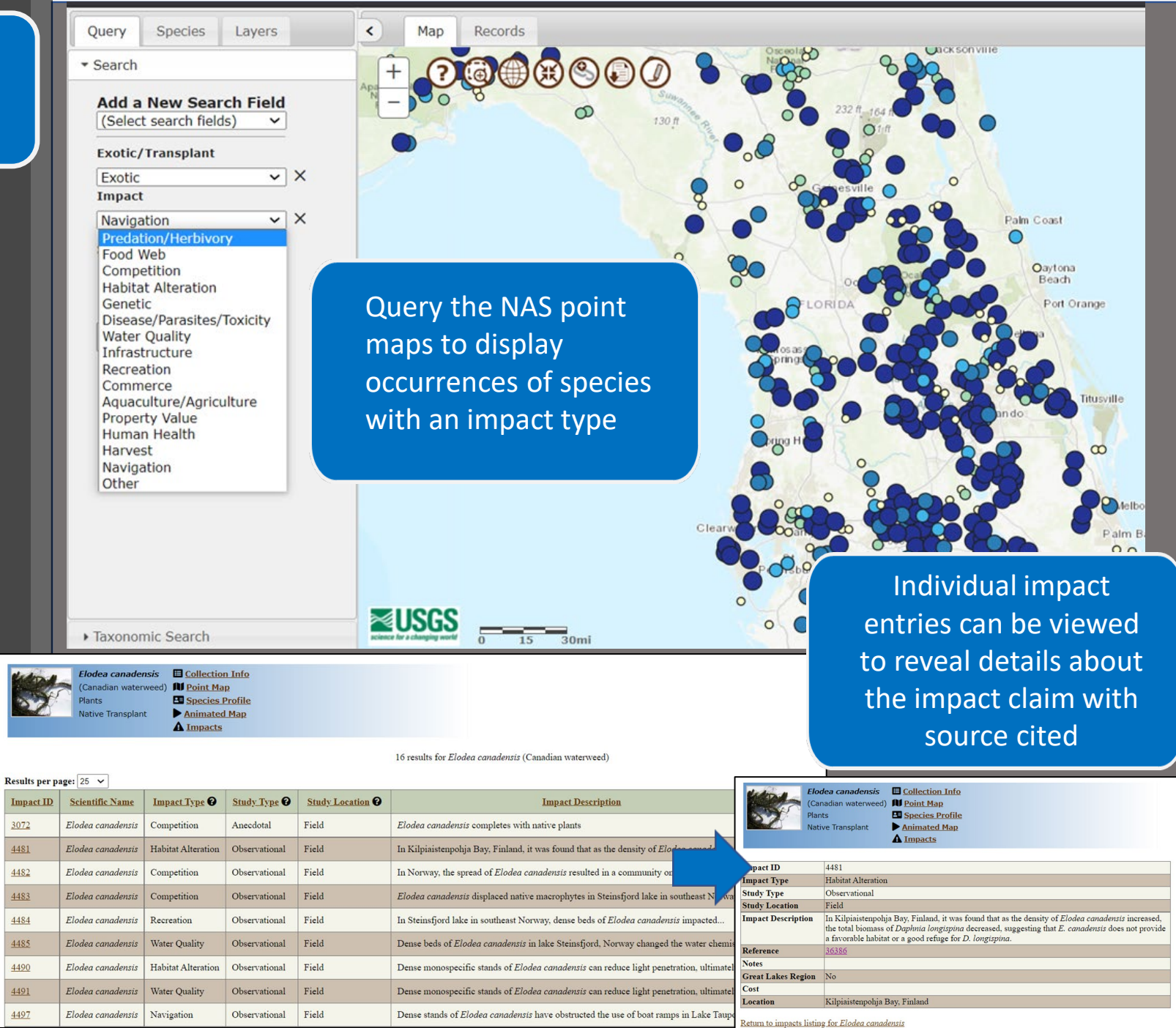
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NAS Impact Tables

Ecological	Economic
Predation/Herbivory	Infrastructure
Competition	Recreation
Habitat Alteration	Aquaculture/Agriculture
Water Quality	Property Value
Food Web	Human Health
Genetics	Harvest
Disease/Parasite/Toxicity	Commerce
	Navigation

- Existing impact tables continue to grow as new publications and news articles come out
- NAS staff continues to complete impact tables for new species



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THANK YOU!
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